REFERENCE ONLY
PLEASE DO NOT REMOVE
FROM CLASSROOM
MARU : DAID : PNL

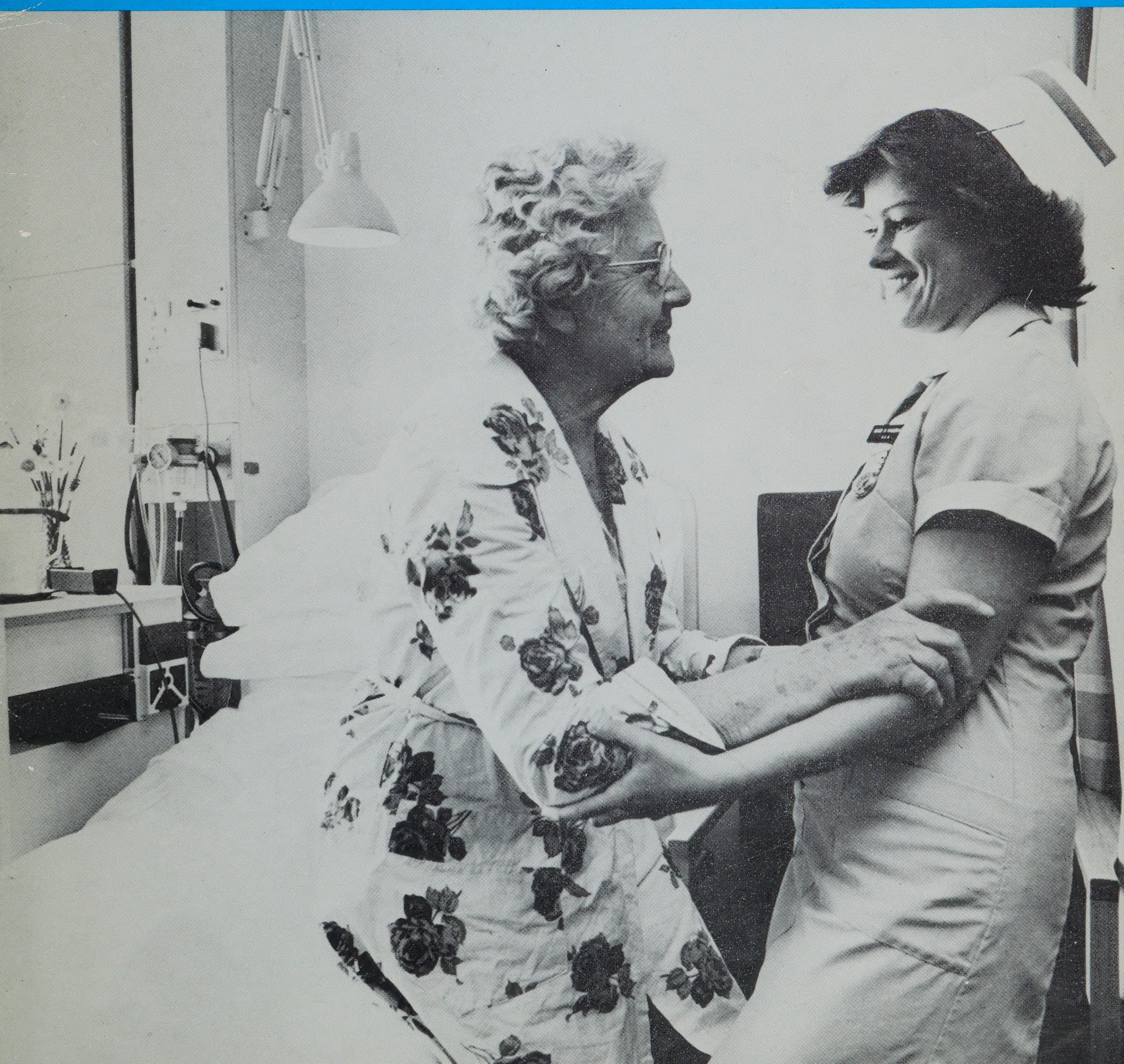
HEALTH BUILDING NOTE 37

MC0143

Hospital Accommodation for Elderly People

DEPARTMENT OF HEALTH AND SOCIAL SECURITY
WELSH OFFICE

HMSO £4.25 net



Health Building Notes

Health Building Notes are intended for use in the briefing and design stages of projects to assist those concerned with the provision and design of new health buildings and the adaptation or extension of existing premises. The Notes contain information on the relevant aspects of current policy, the functional requirements and resultant design implications. They aim at encouraging economy in capital and revenue costs by consistency of provision, standards and equipment and the efficient use of space.

The guidance contained in the Notes is flexible. That is to say, optional solutions with cost implications are indicated, where appropriate, leaving local planners to make their own choice, having regard to overall cost limits. The general approach is to identify functions, activities, equipment needs and those dimensions which are critical to the efficient performance of an activity, but not to relate functions to specific or preconceived floor areas.

A feature of these Notes is the reference to Activity Data sheets, which provide the detailed user requirements for each room or space.

To avoid repetition, guidance on those spaces that commonly occur in health buildings has been brought together in a Health Building Note entitled "Common Activity Spaces" to which reference is made, where appropriate, in individual Notes. A draft of the Common Activity Spaces document has been made available to NHS Authorities.

The Notes are prepared in consultation with representatives from the NHS and appropriate professional bodies concerned with, or having a specific interest in, their content.

Printed in England for Her Majesty's Stationery Office
by Hobbs the Printers of Southampton
(212) Dd738538 C8 2/86 G381

Contents

1 Scope

2 General considerations

2.1 Purpose and objectives of the service
2.3 Service planning
2.6 Main functional units
2.7 Characteristics of elderly patients affecting function and design
2.15 Location
2.18 Internal environmental considerations
2.21 Statutory and other requirements
2.22 Fire safety
2.29 Upgrading of existing hospital accommodation

3 Detailed considerations: function and design

3.1 Introduction
3.2 General:
economy; damage in health buildings; internal spaces; courtyards; critical dimensions.
3.10 Internal environmental considerations:
lighting; noise; ventilation; heating and domestic hot water; fittings; finishes and decorations; design features.

In patient nursing section

3.26 General functional aspects and requirements:
purpose of nursing sections; the patients; short-term admissions; acutely ill confused patients; types of nursing section; size of nursing section; organisation and workflow; planning relationships.

Design and functional requirements

3.44 Single bedrooms
3.50 Multi-bed bedrooms
3.60 Day space – sitting and dining
3.68 Rehabilitation
3.72 Staff base
3.75 Sanitary facilities
3.103 Storage
3.109 Wheelchair and equipment bay
3.110 Clean utility
3.111 Dirty utility
3.115 Pantry
3.117 Nursing section office
3.118 Doctor's office
3.119 Flower bay
3.120 Cleaning space
3.121 Disposal room
3.122 Staff changing
3.125 Seminar room
3.127 Switchroom
3.128 Nursing officer's office
3.129 Additional accommodation
3.132 Potential for sharing space and multiple use of space
3.136 Design considerations:
planning objectives; layout.

Day hospital

3.141 General functional aspects and requirements:
purpose and functions of the day hospital; patients attending; statistics and size; organisation and workflow; transport; planning relationships.

Design and functional requirements

3.160 Main entrance:
lobby; reception and administration; clothes hanging and storage of valuables; waiting space; wheelchair park; WCs.
3.169 Sitting, dining and pantry
3.179 Occupational therapy
3.188 Physiotherapy
3.190 Remedial therapists' office
3.191 Remedial therapists' store
3.192 Speech therapy consultation and consulting/examination
3.195 Treatment rooms
3.197 Sanitary facilities
3.198 Hairdressing
3.199 Clean utility
3.200 Dirty utility
3.202 Storage
3.204 Seminar/staff room
3.205 Offices
3.206 Staff changing
3.209 Disposal room
3.210 Cleaning space
3.211 Switchroom
3.212 Potential for sharing space
3.213 Design considerations

Administration: department of geriatric medicine

3.218 General functional aspects and requirements: purposes; organisation; siting.

Design and functional requirements

3.228 Administrative offices

3.229 Consultants' offices

3.230 Senior Registrar's office

3.231 Office(s) for support staff

3.232 Social workers' accommodation

3.233 Community staff

3.234 Staff WC and hand-rinse

4 Engineering services

4.1 General considerations: installation and economy; general safety; fire safety; noise; control access.

Mechanical services

4.10 General

4.12 Heating

4.18 Ventilation

4.32 Cold water supply

4.35 Hot water supply

4.41 Fire fighting equipment

4.42 Natural gas installation

4.45 Piped medical gases and vacuum

Electrical services

4.46 General

4.49 Electrical installation

4.50 Electrical interference

4.51 Lighting

4.63 Socket outlets

4.70 Emergency electricity supplies

4.73 Staff location system

4.74 Patient/Nurse call system

4.78 Bed-head unit

4.81 Telephones

4.83 Electric clocks

4.84 Fire alarms and detecting equipment

4.85 Cardiac arrest alarm

4.86 Lightning protection

4.87 Plant room and ducts

Engineering references

5 Activity data

5.1 General

5.4 Activity data applicable to this Note

Schedules of activity data

6 Cost information

6.1 General

6.7 Nursing sections

6.12 Day hospital

6.14 Administrative centre

6.15 Engineering

Schedules of activity spaces

Appendices

I Demographic factors relevant to the planning of geriatric services

II Critical dimensions

Bibliography

1 Scope

1.1 This Health Building Note deals with the hospital accommodation needs of elderly people; no previous building guidance on this subject has been issued by the Department of Health and Social Security or the Welsh Office. The guidance covers the requirements of district general hospitals and can be used where appropriate for community hospitals.

1.2 Policy on the care of elderly people is directed primarily towards helping them to maintain independent lives in their own homes for as long as possible. In this, the Department of Geriatric Medicine plays an essential part by providing confirmatory diagnosis, treatment and rehabilitation for elderly patients – particularly those aged 75 and over – with the objectives of treating acute medical conditions, minimising the development of chronic disability, reducing the need for long-term care and, where in patient treatment is essential, facilitating their discharge as early as possible. The overall objective should be to provide the facilities and environment in which the health of patients, who may be very elderly with multiple disorders and varying degrees of dependence, can be investigated and disorders treated.

1.3 As well as in patient facilities at district general hospitals and community hospitals, provision should be made for day hospitals as an integral part of the hospital service for elderly people. Day hospitals differ essentially from local authority day centres for elderly people which are geared primarily to meet social needs.

1.4 The need for fire safety provision cannot be over emphasized and appropriate fire precaution measures must be considered from the outset. Account must also be taken of all current statutory requirements. (2.21–2.28)

Inclusions

1.5 This Note provides information on the design of hospital accommodation for elderly people, covering in patient services, day hospital requirements and accommodation for the administration of a Department of Geriatric Medicine.

Exclusions

1.6 The following provisions are not covered in this Note:

a. accommodation requirements for elderly people with mental illness (information is to be included in HBN 35 currently under revision);

b. out patient clinics which are provided in the general out patient department (although some out patients will also attend the day hospital);

c. accommodation for a district loan equipment store which would need to be located to meet local requirements.

Application

1.7 For simplicity, the guidance is presented as if the required accommodation will be provided by new building. However, the principles outlined are equally valid where alterations or adaptations are being considered and provide the means for assessing the suitability of existing buildings for this purpose. (2.29–2.37)

1.8 The guidance contained in this Note should be applied when providing in patient accommodation for elderly people in community hospitals, whether in new premises or when upgrading or adding to existing hospitals to meet local requirements for community hospitals.

2 General considerations

Purpose and objectives of the service

2.1 The prime objective of the hospital service for elderly patients is to provide for diagnosis, treatment and care at the appropriate level in order to minimise the need for in patient care and to assist patients who have to be admitted to return to the community if possible. The problems involved in achieving this objective are complex and the demands on certain human and material resources are greater than those for other departments. This has significant implications for design.

2.2 The department of geriatric medicine should provide a comprehensive, hospital based but community orientated geriatric service for the elderly population of the district, including advice on the particular needs of elderly patients in other departments. A multi-disciplinary approach is an essential feature of a good geriatric service: the physician, nurse, others providing therapeutic services, and social worker have the principal influence on the patient's care and progress. The support of administrative staff is essential to ensure smooth and speedy co-ordination between the hospital and primary care services and the local social services.

Service planning

2.3 It is estimated that there will be more than 7 million people [in England] aged 65 and over by 1990. Within the elderly population itself the proportion over 75 years of age is increasing (Tables 1 and 2).* Although only just over 2% of elderly people are in hospital at any one time they occupy nearly half of all the beds. However those aged between 65 and 74 make relatively limited use of the department of geriatric medicine because they usually present with a fairly straightfoward diagnosis and without serious complications; their needs for treatment and care resemble those of younger more often than older patients. Although there is no rigid dividing line, in practice after the age of 75 and progressively as old age advances, patients admitted with acute medical illness are much more likely to suffer from a variety of health and social complications which require the multi-disciplinary approach of the geriatric team if their assessment, treatment, rehabilitation and discharge are to be conducted as effectively as possible. Consequently the most elderly age groups make the greatest demand on geriatric medicine, occupying about 75% of all geriatric beds.

2.4 The proportions of elderly people in the population vary greatly in different parts of the country. It is therefore essential to relate the provision of hospital services to actual numbers of elderly people in the district rather than to total population and to take account of the extent to which these fall within the upper age groups.

2.5 Guidance on provision of geriatric beds was issued in 1971 (DS 329/71). When assessing requirements for a District, health authorities will need to bear in mind the Department's view that an effective geriatric service requires (a) the provision of at least 3 beds per 1,000 population aged 65 and over on the main site of the DGH, with immediate access to diagnostic, therapeutic and rehabilitation facilities; (b) a further 2 beds per 1,000 population aged 65 and over for active rehabilitation, preferably in the DGH but otherwise in a general hospital with other acute beds and appropriate facilities; and (c) depending on local circumstances, possibly up to 5 beds per 1,000 population aged 65 and over for longer-stay patients in small local hospitals as near as possible to patients' homes.

Main functional units

2.6 These comprise:

a. in patient services – the recommended size of each nursing section is 24 beds;

b. day hospital – units, normally on the sites of DGH's or community hospitals, where investigation, treatment and rehabilitation can take place (the information provided covers day hospitals for 40 and 25 places);

c. administration – an administrative centre for the district service to elderly people, including an appropriate amount of office accomodation for local authority social workers.

Characteristics of elderly patients affecting function and design

2.7 The following paragraphs indicate those characteristics of elderly patients most likely to have implications for function and design which designers should take into account at an early stage. More detailed guidance on particular design aspects is given in Chapter 3.

Failing sight

2.8 Many elderly patients suffer from varying degrees of poor vision. The main consequences of this are:

a. slow adaptation to sudden changes in levels of illumination and greater difficulty in seeing in a low level of lighting; and

b. poor recognition of signs and directions with resultant confusion and possible difficulties in orientation.

* See Appendix I

Failing hearing

2.9 Varying degrees of deafness are common in elderly people which produce difficulties in communication. Conversation with and between elderly patients will generally be louder than is usual. This means that some rooms, especially those in which auditory privacy is required (eg consulting and examination rooms, treatment and interview rooms) will require a higher level of sound containment than would normally be needed.

2.10 In its most usual form the hearing loss is greater for high tones than for low tones. High tone sounds can be heard if they are made loud enough, but at this pitch they often cause physical discomfort to the deaf and are too loud for those patients with normal hearing. For this reason audible signals, such as nurse call systems, should be buzzers rather than bells.

Limited mobility/physical ability

2.11 Many patients will have limited mobility, eg those suffering from strokes and arthritis. Adequate space must be provided for those who move slowly and who may require the assistance of one or two staff and/or walking aids. Corridors should be wide enough to enable patients in wheelchairs or using walking aids to pass each other unimpeded. Limited physical ability can result in difficulties in gripping taps, handrails and other items.

Incontinence

2.12 Many patients are aware of the desire to micturate but have limited power to restrain the impulse. It is therefore essential that routes to WCs from the bed and activity areas are as direct as possible. It may be quicker for a person dependent upon a walking aid to travel in a straight line than to move a shorter distance which involves turning through two or three right angles. The aim should be to achieve a distance no greater than about 12m from the centre of activity to the WC door in as straight a line as possible.

2.13 The effects of any soiling of furniture and floor covering can be lessened by the choice of appropriate materials. The furnishing fabric and floor coverings selected should be made of low absorption materials thus avoiding odour retention and staining and allowing easy cleaning and maintenance.

Mental confusion

2.14 A department of geriatric medicine is not intended for patients who suffer primarily from mental confusion, but some patients may be disturbed, noisy, prone to wander, and subject to loss of memory. (3.29)

Location

2,15 The day hospital should be on the ground floor and such siting is also desirable for the rehabilitation and continuing care beds. Acute nursing sections need not be on the ground floor but *do* need to be within easy access of the main diagnostic and treatment areas of the hospital.

2.16 Other factors which should be considered are the need to ensure that patients, if they wish to, can view everyday outside activities in order to stimulate their interest and that they are provided, as far as possible, with a sunny aspect which is not overshadowed by other buildings. A garden will provide not only a pleasant place in which to sit and walk but can, if designed with some raised planting beds, offer some patients scope for gardening.

2.17 There should be adequate vehicle access to the day hospital, with both effective turning space for ambulances and associated parking space. Vehicular access should be covered to ensure protection to patients from inclement weather.

Internal environmental considerations

2.18 The overall effect of the internal environment on patients and staff is significant and every effort should be made to achieve a pleasant and homely atmosphere compatible with the clinical requirements for patient care.

2.19 Professional design skills should be employed as an integral part of the design process and not as an afterthought. This will ensure that the selection of finishes, fabrics and furniture will be made in relation to one another and will suit the whole design concept. Full regard, however, must be given to the requirements for cleaning and long term maintenance.

2.20 It is also necessary to pay particular attention to those factors affecting physical comfort such as:

a. the need to ensure adequate ventilation, especially in view of the possibility of a build-up of odours;

b. the provision of suitable heating with adequate temperature controls;

c. the need to ensure effective natural and artificial lighting;

d. the need to maintain a quiet environment for elderly patients;

e. the provision of fixtures and fittings which are suited to the special needs of elderly people.

These considerations are developed further in Chapter 3.

Statutory and other requirements

2.21 It is Government policy that health buildings should comply with the technical requirements of all relevant statutes and regulations even though the Crown need not always follow the procedural requirements of such legislation. Health buildings should also comply with all relevant codes of practice and standards. Whilst the guidance in this Note takes account as far as possible of all statutory and other requirements currently in force at the time of writing, it nevertheless does not relieve health authorities of the responsibility to ensure compliance with statutes, regulations, codes and standards at all stages in their building projects.

Fire safety

2.22 The need for structural fire precautions and adequate means of escape from the total accommodation must be taken into account at the earliest possible planning stage. Departmental guidance on fire safety is contained in Health Technical Memorandum (HTM) No.81 entitled "Fire Safety in New Health Buildings"

which is the forerunner of a series currently in preparation. It is essential that project teams familiarise themselves with this guidance when available and the statutory regulations on the subject.

2.23 The principles of fire safety apply both to new projects and to alterations and upgrading of existing buildings. In the latter case the aim should be to eliminate existing risks.

2.24 It is important to establish those aspects of fire safety strategy which affect the design, configuration and structure of a project during the design stage. The designer should then verify his proposals with the Chief Officer of the Local Fire Authority, and ensure that the project fire safety officer and all other planning staff are fully acquainted with the *fire safety strategy* for the design in operational terms (staff responsibilities etc.), equipment provision and building and engineering layouts.

2.25 Nursing sections present a high life risk. Some patients may be frail with failing sight and hearing, impaired sense of smell or lack of sensations in the limbs; they may also be confused and may, if smoking in bed or in a chair, cause fire accidentally.

2.26 Because of the characteristics of the patients and the fact that they are slow moving, it is essential that all staff receive training in fire safety, including evacuation of this category of patient, and are aware of the problems likely to arise if a fire occurs.

2.27 If the raising of the alarm is delayed, the danger from smoke and fumes moving in advance of the fire itself could be the main risk. Evacuation procedures may be encumbered by the need to move many patients in their beds or on mattresses and to provide close attendance to others. The need to move beds to a place of safety during an emergency will require adequate width for doors and corridors.

2.28 The layout of bed areas should avoid open planning. Each single room and multi-bed room must have a half hour fire resisting enclosure with a half hour fire resisting door, but the doors need not have a self closing device. Staff training should ensure that, in the event of fire, doors are manually closed to contain smoke, toxic gases and fire.

Upgrading of existing hospital accommodation

2.29 The term upgrading covers work which will provide in existing stock hospital accommodation for elderly patients to the functional, physical and environmental standards set out in this Note. The cost of such upgrading should conform to the guidelines indicated in the Department's DS letter DS183/74 issued to Hospital Authorities on 30 July 1974. Those guidelines take into consideration the estimated life span of the project and the degree of difference between an upgrading project and a new building.

2.30 Costing comparisons between an upgrading and a new project will include, in addition to the building cost, the cost of relocation of patients, staff etc, demolition and salvage costs, disruption of services to other parts in a phased project and temporary supplies and revenue effects on any impaired functioning of areas affected by upgrading.

2.31 A thorough analysis of all functional and physical conditions of the existing building should be undertaken before any decision is taken to carry out an upgrading project. This is necessary because of the long term effects of providing such accommodation in relation to the geriatric services for the district/area as a whole. The check of physical and other aspects of existing buildings should include:

a. availability of space for alterations and additions;

b. age of buildings, condition of fabric, ie external and internal walls, floors, roofs, doors and windows;

c. adequate engineering facilities;

d. adequate life expectancy of engineering services requirements;

e. storey height;

f. fire resistance of building elements, width of doors and corridors and means of escape;

g. available areas and plan configurations;

h. type of construction;

j. problems connected with patient and environmental requirements, eg nursing section location and aspect;

k. supporting facilities eg car parks, roads, boilerhouse, laundry, supplies.

2.32 All general and detailed planning and design considerations stated in this Note under appropriate headings are relevant to an upgrading project and should be applied to a maximum degree in order to reach a balanced co-ordinated solution representing the best value for estimated expenditure.

2.33 Having decided that existing health premises are suitable for upgrading or conversion the main requirement will be to assess how the accommodation needed to practise modern geriatric medicine can be provided. The aim should be to provide, as far as practicable, accommodation as listed in the Note conforming to the detailed Activity Data and critical dimensions. Where spaces have to be omitted or curtailed, full consideration must be given to all the implications for the standard of care by the omission or reduction in space.

2.34 The main broad requirements which should be observed in an upgrading exercise are those indicated in this Note relating to patient provision in nursing sections, rehabilitation, sanitary facilities, staff provision and storage. Sanitary provision should aim for one WC for three or four patients with an even distribution of WCs throughout patient areas to ensure the 12 metres distance from points within these spaces. (3.76)

2.35 The main environmental factors which should be considered are:

a. provision of light and control of glare;

b. good ventilation without draught;

c. facilities which are suitable for elderly patients and those in wheelchairs (basins, taps, handrails, etc);

d. suitable finishes and decor;

e. level floors without change in heights;

f. sight lines for seated patients ie transom and window sill heights which will not impede the patients' view;

g. privacy for patients in bed and sanitary areas.

2.36 Upgradings must conform to current fire safety and other statutory regulations. It is particularly difficult to analyse existing buildings with regard to fire resistance of floors, walls and doors. From the fire safety aspect it is preferable that accommodation for elderly patients should be located on the ground floor. Where upper floors are occupied it is essential that there is adequate horizontal escape provision with appropriate compartmentation.

2.37 This summary of the main aspects of upgrading is necessarily general in character and it is recognised that each upgrading project will present many points of detail requiring ad hoc decisions. In all instances compromises may have to be made between building note standards and what it is possible to achieve.

3 Detailed considerations: function and design

Introduction

3.1 This chapter enlarges upon the objectives, functional requirements and design implications of each of the main functional elements (2.6) and includes a summary of the internal environmental considerations applicable to the accommodation as a whole. Activities, equipment, environmental conditions and finishes of walls, floors and ceilings are detailed in the Activity Data sheets. The chapter comprises five main sections:

a. General points;

b. Internal environmental considerations;

c. In patient nursing section;

d. Day hospital;

e. Administration.

General

3.2 The design of the accommodation must reflect the need to preserve the dignity and privacy of patients, particularly where men and women are nursed or treated in adjacent areas and share certain accommodation and circulation spaces.

Economy

3.3 The design of the accommodation must take account of the need for economy in all aspects including space provision, maintenance, staff utilisation and energy consumption. Whilst the overall capital expenditure must be kept in mind, it is equally important to ensure that running or revenue costs are reduced and that the revenue consequences of project decisions are fully considered. The need to obtain the best use from any sophisticated equipment and engineering service provided must be considered.

3.4 Economical space provision can be achieved in the following ways:

a. by planning for spaces to be used more intensively for a particular purpose. This means that the amount of space for a service or group of services should be no more than is currently needed, that unnecessary duplication should be avoided, and that spaces should be used more, where possible, by programming for different users;

b. by planning for spaces to be used for more than one function or purpose. This means reducing the specialised nature of the accommodation, when possible, so that its use by various people for various purposes is not unduly restricted or precluded.

These methods of achieving economy will often be facilitated by ensuring correct working relationships.

3.5 Materials and finishes should be selected to minimise maintenance costs (including cleaning costs) and be compatible with the functions described. Assemblies which require regular decoration or which are difficult to service should be avoided. Components which are subject to heavy usage such as entrance doors, corners on partitions and counters should receive special design consideration. In particular, floor finishes should be restricted in variety and, where soft floor coverings are specified, should have a backing impervious to fluids.

Damage in health buildings

3.6 When designing and subsequently equipping health buildings due consideration should be given to the need to minimise the likely occurrence and effects of accidental damage. In particular, damage in health buildings has been aggravated over the years by the increased use of heavier mechanical equipment for the movement of patients and supplies and, to some extent, by the use of lightweight, often less robust, building materials which cannot withstand impact. Reference should be made to the relevant British Standards and to the advice given in the Department's DS (Supply) letter 42/75 dated 5 August 1975 about the buffering of movable equipment.

Internal spaces

3.7 Internal rooms may contribute to economy in planning but the resultant additional artificial lighting and ventilation which may be necessary will add to both capital and revenue costs; such rooms are not conducive to good working conditions and should be limited to supporting service rooms or those spaces which are either infrequently occupied or demand a controlled environment. Rooms which are likely to be occupied for any length of time by staff or patients should have windows. Office staff may be difficult to recruit or retain if office areas do not have a view to the outside.

Courtyards

3.8 The use of landscaped internal courtyards, provided that they are accessible and economic to maintain and that privacy in the surrounding rooms can be preserved, enables more rooms to receive natural daylight and ventilation.

Critical dimensions

3.9 The critical dimensions which are particularly relevant to this Note relate mainly to the space requirements arising from the need of elderly people for assistance by staff and/or their need to use various aids. Activities needing assistance and the necessary space are walking,

getting up, transferring from one kind of support to another, dressing and carrying out rehabilitation activities. The figures in Appendix II contain information on critical dimensions for the activities mentioned above which are not provided in the Common Activity Spaces document.

Internal environmental considerations

3.10 This section enlarges upon the environmental considerations which apply to the accommodation as a whole. The particular requirements are dealt with in the appropriate section.

Natural and artificial lighting

3.11 Daylight is an important amenity for both patients and staff but, since daylight is variable, artificial lighting is equally important. The design objective should be a light and pleasant interior with an adequate level of illumination in all conditions.

3.12 The presence of sunlight within a building enhances colour and shape and helps to make a room bright and cheerful. It is important, therefore, to consider orientation in the early planning stages. However, excessive glare and solar heat gain can cause discomfort. Glare should be avoided or controlled by screens or curtains, as necessary; lowering the window head will also reduce glare. Solar gain can be controlled by external screens or by the shape of window.

3.13 The design of windows is inevitably a compromise. In addition to the various statutory requirements, the requirements for adequate illumination and ventilation, insulation against noise, minimal thermal loss or solar gain, the prevention of glare and the provision of a visual link with the outside world need to be taken into consideration.

3.14 Artificial lighting should be capable of providing the required levels of illumination at all times; it also has an important contribution to make to the aesthetic appeal of the interior of the building. The aim should be the provision of light at the intensity required in working areas with a reduced level (but not an abrupt change) of background illumination. While the choice between incandescent or fluorescent lamps is largely an economic one, it should not exclude the use of incandescent lamps in appropriate areas.

Noise

3.15 Careful consideration should be given to the maintenance of a quiet environment for elderly patients. The effects of noise can be lessened by planning measures such as locating noise-generating rooms away from those requiring some quietness, eg pantries away from bedrooms, by isolating sound sources with sound containing partitions and doors, by absorbing sound with acoustic materials, eg acoustic tiles over the staff base, and generally by use of soft floor coverings, curtains and other materials which do not reflect sound. Care is required to ensure there is adequate auditory privacy in offices, treatment, consulting/examination and seminar rooms to prevent noisy activities being a nuisance in adjacent spaces.

Ventilation

3.16 In view of the possibility of odours in bedrooms and day areas, the level of ventilation should be higher than that in similar spaces in other specialist departments. Natural ventilation should be used wherever possible and every effort should be made to avoid draughts: extract ventilation may be required in some spaces. Draughts can be eliminated by weather stripping of doors and windows, by placing ventilation windows above head level and by providing lobbies to external entrances. (4.18–4.31)

Heating and domestic hot water

3.17 There should be adequate temperature controls so that room temperatures are maintained. (4.14) Elderly people use radiators as a means of support and care should be taken to ensure that radiator surface temperatures do not exceed 50°C or are otherwise suitably protected. Radiators should be selected and installed so as not to present insuperable cleaning problems or to create obstructions. Attention is drawn to para. 4.38, 4.39 and 6.16 (a) concerning the requirements for distributing the domestic hot water at a temperature of 52°C ± 2°C.

Fittings

3.18 The physical limitations of many elderly people place special demands on the designer in matters of internal design and fittings. Some patients will be in wheelchairs and designers should take into account the difference between reaching objects from a standing position and from a wheelchair, and also the difficulties in manoeuvring a wheelchair caused by the projections of the chair itself. Reference should be made to the ergonomic drawings in the Common Activity Spaces document.

Finishes and decorations

3.19 Accommodation can be grouped according to similar functions which require similar finishes and decor as follows:

a. Bed spaces
The finishes should be soft in appearance and colourful eg wallpapers and soft floor coverings.

b. Clinical, treatment and sanitary spaces
Finishes in these spaces should be durable and economic and, in order to withstand frequent cleaning, should also be hard, smooth and with minimum joints.

c. Day spaces, offices
The finishes in day spaces should be suitable for rehabilitative activities as well as being able to withstand heavy wear and cleaning. Offices should be similar to those elsewhere in the hospital. For both, the finishes selected should be reasonably easy to maintain.

d. Circulation
In circulation areas the main requirement is resistance to heavy wear compatible with the need to blend with the rest of the decor; finishes should also allow easy, frequent cleaning.

Colours

3.20 Choice of colours can influence the morale of patients and staff; colours can also be used to help patients to orientate themselves and to recognise particu-

lar rooms more quickly, eg WC doors painted in one distinctive colour. Generally overall tones should be light with some strong accents; stronger colours can be used but should not be overpowering; most people prefer middle range light colours to dark ones.

Floor coverings

3.21 It is important to select a floor covering which contributes towards the creation of an attractive environment, but which does not impede the elderly using walking aids, and can be effectively maintained. There has been a rapid technological change in soft floor covering construction which has produced a wide variety of new materials. Consideration should be given to using soft floor coverings in the nursing sections and day hospital.

3.22 Strong patterns on floor finishes should be avoided as they can be mistaken for obstructions particularly by partially sighted patients; however, some clinicians advocate specific floor markings as an aid to patients in the practice of walking. Residual stains will show up more on plain finished coverings than those with a pattern. Other factors to consider are surface drag, static electricity, flammability, infection hazards and use by wheeled traffic. Floors should not present or appear to present a slip hazard.

3.23 In order to minimise transfer of dirt and moisture from the outside, an effective barrier zone should be installed at main entrances. It should provide a means of removing most of the dirt and moisture from shoes, wheels and walking aids before the interior is reached. A canopy at the entrance should be the first stage and it should be large enough to allow an area of dry ground outside where the removal process can begin. Through the entrance doors the removal of dirt and moisture should continue on one or a number of suitable surfaces: the larger the zone, the more effective the removal. Coir mats in wells are inadequate for this process and should not be considered. Other doorways which connect with the exterior should also be protected by some form of barrier.

3.24 The barrier zone selected must not create changes of surface levels nor impede patients with a shuffling gait or those who may be using walking aids or wheelchairs. Reference should be made to the Report of the Floor Covering Study Group issued to Health Authorities with HN(78)32. A plan of a typical barrier zone is shown at Appendix 2 of the Report.

Design features

3.25 The following are required for elderly patients:

a. ***Doors***

i. Frequent use will be made of walking aids and wheelchairs throughout the department and their use imposes special demands on the design of doorways and activity spaces. Doorways should be wide enough to allow a clear space for patients using a walking aid as well as the passage of wheelchairs; the clear space required for doorways is 800mm minimum.

ii. Doors should have lever handles at 900mm height.

iii. In WCs locks with large easy-grip bolt handles openable from outside should be provided. Outward opening or sliding doors are preferable and lift-off hinges or other emergency release fittings are essential; bi-fold doors are not suitable.

iv. Transoms across the sight-line of seated patients should be avoided in the design of glazed doors.

The width of doorways should be sufficient to allow a clear space for the passage of patients using walking aids or wheelchairs.

b. ***Windows***

A sill height at 800mm is recommended for bed and day spaces so that patients can see out of windows whilst sitting in a chair. Guidance on types of window and on the safety aspects is contained in the Component Data Base, Window 2/3. Transoms across the sight-line of seated patients should be avoided. The problems of cleaning both the interior and exterior of windows should not be overlooked.

Window sill height should not obstruct seated patients' view.

Hand-rails on long runs of wall are essential to provide support.

The height and design of basins should allow ease of access by seated patients; a clear space underneath is essential.

c. ***Hand-rails***
The provision of hand-rails on long runs of wall in circulation areas is essential in order to provide support for patients; the hand-rails should be designed to provide a good grip (50mm roll) with a 50mm clearance between hand-rail and wall, with strong fixing on brackets. The recommended fixing height is 950mm from floor level to the top of the hand-rail. The hand-rail should be of a material not likely to produce static shocks in combination with the floor covering.

d. ***Steps and ramps***
Steps, if unavoidable, should be no more than 150mm×280mm. There should be no open steps, single steps or overhangs, and walls should return 300mm beyond the top riser; there should be hand-rails on both sides of the steps and staircases. Any ramps, approaches, dropped curbs etc should conform to the requirements in BS5810, (Access for the Disabled to Buildings), and should have a slip-resistant finish.

e. ***Patient/Nurse call systems***
A simple design should be used, suitable for patients with limited sight, strength and dexterity. (4.74)

f. ***Radiators***
The surface temperature should not exceed 50°C; otherwise surfaces should be protected.

g. ***Wardrobes and lockers***
These should have large easy-grip handles accessible to both standing and sitting patients.

h. ***Showers***
The maximum flow temperature should be 43°C. Controls should be in a position easily operated by staff and patients.

j. ***Basins***
Strong fixing is required allowing basins to be used for support by patients. They should be of a suitable height and design for ease of access by patients seated in a chair or wheelchair and should not therefore be supported by legs. Short-lever action taps for patients' use are preferable although taps with cross-handles for good grip may be acceptable.

k. ***Mirrors and shelves***
The fixing heights should be suitable for wheelchair and standing users; shelves should not be placed over basins.

l. ***Patients' coat hooks***
A fixing height of 1500mm should be suitable for all patients.

m. ***Mechanical aids***
Staff will require to use mechanical lifting aids to move some patients in and out of beds, chairs and baths. It is important to ensure that lifting aids are compatible with the design of beds, chairs, WCs and baths and that there is space to store them reasonably close to bed areas when not in use; storage should not be in circulation space.

In patient nursing section

General functional aspects and requirements

Purpose of nursing sections
3.26 The purpose of nursing sections is to provide accommodation for:

a. the investigation, diagnosis and initial treatment of patients including joint assessment with the Department of Psychiatry and other specialties as appropriate;

b. rehabilitation to promote independence and mobility of patients and aiming for:
   i. early discharge,
   ii. eventual discharge,
   iii. reduction of dependency for longer-stay patients;

c. patients requiring continuing care;

d. patients requiring periodic short-term admissions.

3.27 Nursing sections, particularly those for rehabilitation and continuing care, become in effect a patient's home for the duration of stay in hospital. This should be borne in mind when designing the nursing sections.

The patients

3.28 Patients for whom the nursing section will make provision can be classified, in terms of clinical features and probable length of stay, into three main groups which are set out below. The information refers to a likely mix of patients but will clearly be subject to much short-term variation and the dividing lines between the groups can never be absolute.

a. ***The acutely ill patient***

The nursing section provides accommodation for the treatment of elderly patients with acute medical illnesses similar to that provided for patients treated in the adult acute nursing sections (any who require intensive therapy would be admitted to the intensive therapy unit). Active rehabilitation at the bedside, assistance and re-education in walking and other remedial activities within the bedrooms, corridors and day space will be an integral part of the treatment. The average length of stay is likely to be only a few weeks.

b. ***Patients needing continuing active rehabilitation and treatment***

These should be accommodated preferably on the main district general hospital site, although in some circumstances the nursing section may have to be sited in another building on a multi-site general hospital or in a community hospital. For these patients rehabilitation will take place in the bed spaces, corridors and day space of the nursing section and adequate space should be allowed both for this and for the use and storage of appropriate equipment. Most patients will be discharged within three months and few will remain longer than six months.

c. ***Patients requiring slower-stream remedial therapy and/or continuing care***

The needs of slow rehabilitation patients and those requiring continuing care are very similar. Both will be out of bed for part or most of the day and will require support and stimulus by means of purposeful activity from the physiotherapy and occupational therapy teams. For planning purposes it may be convenient to assume that patients staying over six months are classified as patients needing continuing care even though some may still be discharged after that date.

Short-term admissions

3.29 Most departments try to set aside a few beds to accept planned short-stay admissions of elderly patients who are being looked after at home. The medical state of these patients may be well known to the physician in geriatric medicine and, if so, not much in the way of reassessment is likely to be needed. In general, the needs of these patients can be equated with those of the slow rehabilitation stream.

Acutely ill, confused patients

3.30 Some patients are temporarily confused as a complication of physical illness while others suffer from permanent mental impairment which may or may not be associated with physical illness. In either case, they may be disturbed, noisy and prone to wander even though physically ill. Two of the single rooms should be sound attenuated to accommodate the most noisy and disturbed patients.

Types of nursing section

3.31 The facilities needed for each of these groups of patients and by the staff caring for them have many common features, but there are a few differences which are sufficient to justify making provision for two types of nursing section. These are:

TYPE A – for those requiring active treatment as in 3.28(a) above.

TYPE B – for those requiring continuing active treatment or rehabilitation and slower stream remedial therapy and those requiring continuing care.

The differences, where they occur, are noted in the text, the schedule of activity spaces and activity data sheets.

Size of nursing section

3.32 Neither of the nursing sections should contain more than 24 beds. The factors which influence the size of the section are:

a. the future trend indicating an increasing number of patients over the age of 75 years whose frailty, dependency and need for individual care will mean a greater demand on staff and resources;

b. a reduction of the number of patients in the care of a sister/charge nurse and the multi-disciplinary team should ensure a more active and individual approach to treatment and contribute to a higher through-put per bed.

Organisation and workflow

3.33 The likely organisational pattern of nursing sections is as follows:

a. Patients will be admitted as a result of general medical practioner referrals, domiciliary visits, from the out patient department, from the accident and emergency department and/or on transfer from another department in the hospital. They may be ambulant but are more likely to arrive in a wheelchair or on a trolley and may be accompanied by friends or relatives who may themselves be elderly.

b. As indicated in paragraph 3.28 above, many of the patients on admission may be acutely ill and require the services of the diagnostic and therapeutic departments.

c. The patients will be nursed in single rooms or in single sex multi-bed rooms. Those who are acutely ill and/or are more highly dependent upon nursing or other staff will be grouped in a proportion of beds near the staff base. The provision of multi-bed and single rooms with associated WC and washing facilities enables the nursing section to accommodate both men and women at the same time, if necessary, whilst allowing adequate segregation and privacy for each sex.

d. From the time of admission, rehabilitation by physiotherapists and occupational therapists and the nursing staff plays a key role in the treatment of the majority of patients. It will take place:

i. at or near the bedside;

ii. in a space allocated and equipped for this purpose for use by a number of the patients and shared, if possible, between two nursing sections;

iii. in the day hospital if this is on the same site, or

iv. in the Department of Rehabilitation when the day hospital is inaccessible or unavailable.

e. In addition to group and individual therapy in the day space, the occupational therapist will need to work at the bedside, in the bathroom/WC and occupational therapy space with patients in need of specific remedial treatment or assessment and training in activities of daily living. Patients who would benefit from more intensive rehabilitation, assessment and training in domestic activities should be treated in the occupational therapy section of the day hospital or in the Department of Rehabilitation if special facilities are required.

f. In order to promote independence and mobility, patients are likely to be confined to bed for as short a time as possible and to be out of bed and dressed during the day. When not receiving individual treatment much of their time will be spent in the various day areas but they may well return to their beds for a period of rest particularly after lunch.

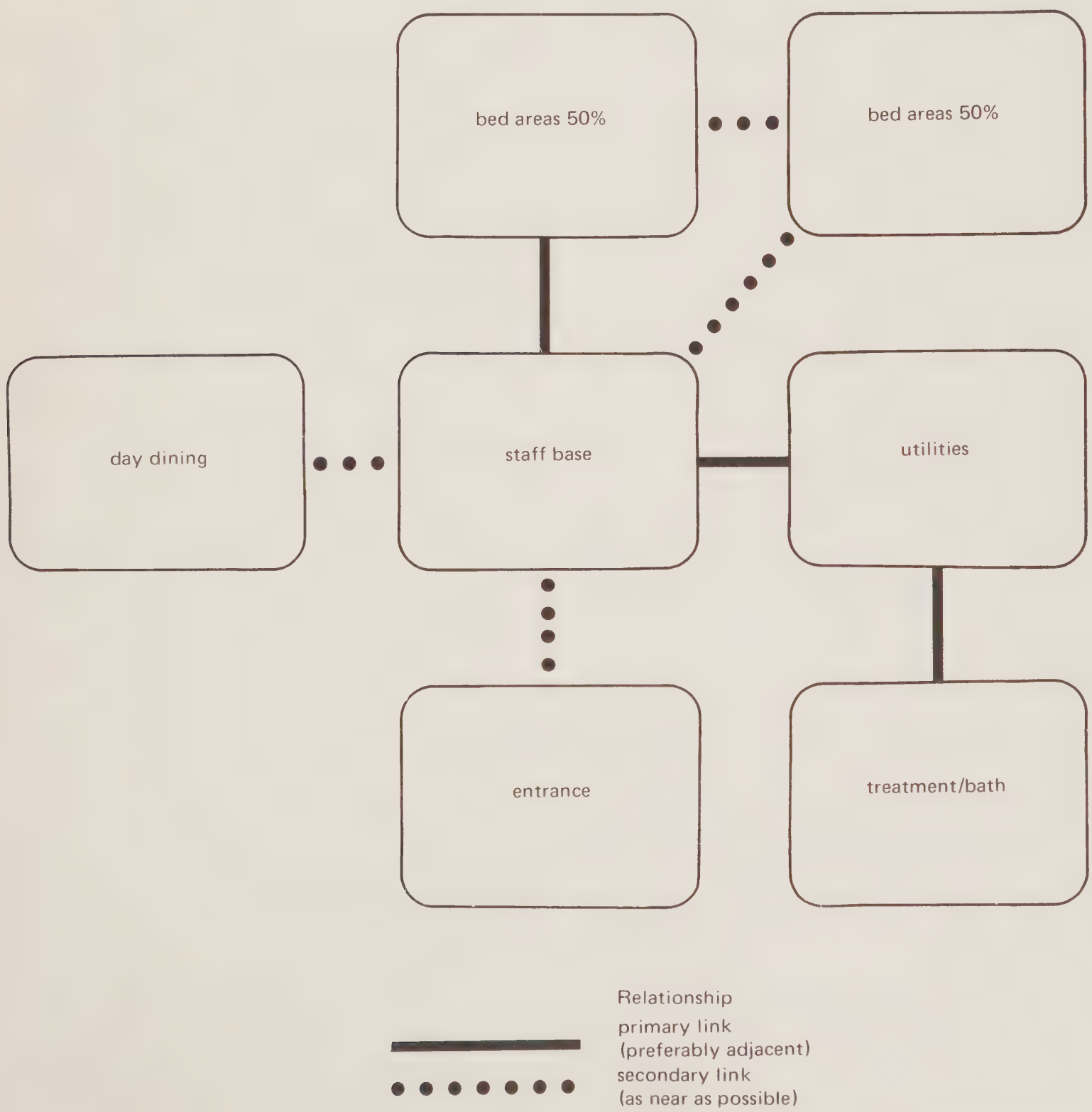
Planning relationships

3.34 Paragraphs 3.35 to 3.43 give guidance on the relationship between the nursing sections and hospital departments, and between the various activity spaces within the nursing sections themselves. These aspects must be considered at early planning and design stages.

Within the hospital

3.35 Patients in a Type 'A' nursing section will require the services of various diagnostic and therapeutic departments of the hospital. In order to avoid tiring journeys for the patients to these departments and to keep staff travel time down to a minimum, it is desirable that the nursing sections should be closely related both to the Department of Rehabilitation and to the diagnostic facilities, including those in the out patient department and the day hospital. A ground floor location is ideal for the Type 'B' nursing section so that patients can easily be taken out to enjoy the hospital grounds, and for ease of evacuation in case of fire; access should be by ramps rather than steps.

Diagram 1
Planning relationships within the nursing section (paras, (3.36–3.43)



Within the nursing section

3.36 *Patients' requirements* To avoid a feeling of isolation and bewilderment, patients should be able to see and speak to staff moving about the section and feel confident that the staff can see them, particularly those patients who are acutely ill, insofar as this is compatible with the need to comply with Building and Fire Regulations. Privacy, however, is required at the bedside, and is essential in all sanitary facilities.

3.37 To promote and maintain continence, patients should have direct access to WC and washing facilities from all bedrooms and day spaces; they should not have to walk more than about 12 metres by a direct route to them. Sanitary facilities should not be located at one end of the nursing section remote from bedrooms and day spaces (see paragraph 3.139 relating to economy in service runs).

3.38 Patients should have immediate and constant access to their clothing and other possessions.

3.39 It is desirable that day spaces should overlook a scene of activity or interest outside.

3.40 *Nursing requirements* Patient areas (bedrooms and day spaces) and the main support services need to be associated with the staff base which is the administrative centre of the nursing section.

3.41 All patients require good nursing observation and supervision by day and night. In order to achieve this it is essential that *at least 50%* of the beds are close to the staff base. This will give general visual and auditory observation of the acutely ill and the most dependent patients and will provide easy access to them. The remaining beds should be as closely related to the staff base as possible.

3.42 Because day spaces are in constant use they need to be within a reasonably short distance of the staff base.

3.43 Service areas, clean and dirty utility, should be located in close association with the staff base to achieve minimal walking distance for staff.

Design and functional requirements

Single bedrooms (Refer to Common Activity Spaces document)

3.44 Each nursing section should contain 2–4 single rooms to accommodate:

a. high dependency patients;

b. those patients likely to disturb others;

c. those needing segregation for clinical or other purposes;

and to increase the flexibility in the use of the section in allocating accommodation between the sexes. At least two of these single rooms should be sited near to the staff base. A patient/nurse call system of simple design and suitable for elderly people will be required in each room.

3.45 The size of single rooms should be sufficient to enable clinical and therapeutic activities to be carried out by various members of the multi-disciplinary team. Space is required to enable staff to assist the patient to get in and out of bed and to use a mechanical hoist; space is also needed to use a walking aid or wheelchair, to sit comfortably in a chair and to receive visitors. There should be provision for the storage of personal clothing, a small suitcase and personal effects. (3.58)

3.46 Two rooms should be sound-contained so that patients who may be noisy can be nursed without disturbing others; the sound attenuation level for these rooms should be 50dB(A). The partitions of the two sound-contained rooms will penetrate the service void for acoustic reasons.

3.47 Internal partitions, adjacent to circulation spaces should be partially glazed and curtained; and doors to bedrooms (with stand-open devices) should have a vision panel. Privacy control should be operable from within the rooms only.

3.48 Washing facilities which will enable the patient to use the basin from a seated position are required in each bedroom; these should also be suitable for staff hand washing. If there is no provision for isolation elsewhere in the hospital one room should have a WC en suite.

3.49 Single or double inward-opening doors should allow a minimum clear opening dimension of either 1100mm or 1300mm respectively, depending upon the access available from the adjacent corridor. Information on the movement of beds will be contained in an Appendix of HTM 81 "Fire Safety in New Health Buildings" currently in preparation. (2.22)

Multi-bed bedrooms (Refer to Common Activity Spaces document)

3.50 The number of multi-bed bedrooms and the number of beds within them may be influenced by local preferences and, in the upgrading situation, by structural constraints. Preferably they should contain 4–6 beds. Type 'A' could have two 5-bed rooms which would incorporate a small amount of sitting space for high dependency patients.

3.51 The provision of a 2-bed room or two adjacent single rooms with a communicating door which can be used by close relatives and friends is a matter which will need to be decided locally.

3.52 In order to provide good visibility into the bedrooms, glazing in corridor partitions should extend horizontally as far as fire safety regulations and other practical considerations will allow. Glazing should start at 900mm from the floor level and be obscurable. The problem of cleaning interior glazing should not be overlooked.

3.53 The minimum critical dimensions of each individual bed space within a multi-bed area are 2500mm × 2900mm.

3.54 The curtain tracks may end parallel with the wall at the bedhead if there is no fixed bedside wardrobe and the curtain does not cause obstruction to service outlets. The curtain material should be shadow-proof and flame retardant and if a ceiling-mounted track is fitted the curtains should have a scalloped or net inset heading to ensure ventilation and light when the curtains are drawn.

3.55 Individual reading lamps of 40 or 60-watt power are required over each bed and the call system should be readily available to the patient.

Space around the bed should allow bedside nursing care without interference to adjacent beds.

A fixed bedside wardrobe for hanging day to day clothing and storing a small suitcase.

3.56 For reasons of fire safety and limiting the spread of smoke, half-hour fire doors must be provided to each multi-bed space. (2.28) It is recommended that the doors should be partially glazed, single swing, with stand-open devices.

3.57 The scale of provison for oxygen and medical vacuum terminals should be in accordance with Appendix 3 of HTM22 (Piped medical gases, medical compressed air and medical vacuum installations) but for Geriatric Assessment read type 'A' nursing section. The extent to which piped services may be used for the categories of patients in the longer stay Type 'B' nursing section does not usually justify the expenditure involved in providing them. However, in the interests of future flexible use, in a new project, piping could be installed on the same scale as that for a Type 'A' nursing section but capped at the outlet positions.

3.58 Storage will be required for patients' personal clothing and any hospital clothing which may be allocated for their use. It is desirable that patients should not be separated from their personal possessions whilst in hospital and therefore storage within each patient's bed space or single room is preferred. This can be achieved by providing a fixed bedside wardrobe (Ref: Manufacturers' Data Base document 5/1*) for hanging day-to-day clothing and storing a small suitcase, with a small bedside locker for holding small articles, such as towel, water jug and glass. A mobile locker/wardrobe has limited capacity and additionally requires secure suitcase and clothing storage elsewhere within the nursing section.

3.59 Provision for the storage of any hospital supply of personal clothing and 'out of season' clothing is referred to in para 3.107.

Day space – sitting and dining

3.60 The nursing dependency of the patients in either type of nursing section using the day space will vary. Some will be slowly ambulant with or without walking aids, some may additionally require staff assistance, whilst others will be in wheel or mobile chairs. As many patients as possible should be encouraged to use the central day space for dining, relaxation, reading, watching television, receiving visitors and participating in recreational and other social activities. The physiotherapist and occupational therapist will also use this space at times for continuing some therapeutic procedures with patients, individually or in groups. All these activities are as important therapeutically as other aspects of medical and nursing care and therefore the day space should be regarded as a treatment area. Thus it is essential that the recommended balance between the number of beds and the day space area is maintained.

3.61 The amount of day space required for both nursing sections differs as the anticipated room occupancy will not be the same. In type 'A' nursing sections approximately half of the patients will be either in or sitting by the bed and the remainder in the day spaces, whereas in Type 'B' sections the majority of patients will be in the day spaces. The recommended net usable area for the day space to accommodate these activities in the nursing section is 2.6 m^2 per bed for the Type 'A' section and 4.2 m^2 per bed for the Type 'B' section. This space allocation provides for all activities by patients, staff and visitors.

3.62 Within this overall allowance it is advisable to provide a small quiet area to enable those patients who enjoy activities in quiet surroundings to do so. This quiet area might also be used on occasion as additional accommodation for patients' relatives needing to stay over-night. It should not be remote from the staff base. (3.130)

3.63 The sitting and dining spaces can be designed separately or as one space with facilities to enable it to be divided to meet the required functions. Combining the day space of two adjacent nursing sections allows a better

* To be superseded by the Component Data Base storage document.

utilisation of space provided that it is not too remote from the staff base and general observation can be maintained. Room dividers such as stable free-standing screens, plants, etc. will give a feeling of diversity while ensuring the full use of space and flexibility to correspond with changing needs. The screens should be designed to blend with the overall architectural concept but not to impede activities.

3.64 Natural ventilation by opening windows is desirable but not always effective for a variety of reasons. To ensure that there is effective ventilation in the sitting space mechanical ventilation may be required. (4.18–4.31) The designers should aim to create an environment which is warm, cheerful and comfortable, well ventilated and free from odours, provided with a variety of easy chairs, and space for wheelchairs and patients passing with walking aids.

3.65 Finishes and design will influence the atmosphere of the day area to a great extent: examples are the provision of tungsten lighting overall with a few spot or wall-lights, and some decorative features such as pictures and indoor plants. All will help to produce a more homely atmosphere.

3.66 It will be necessary to group chairs for some of the activities, and the creation of a situation whereby chairs have to be lined up against the walls should be avoided. Flexible arrangements will be made difficult in an area which is long and narrow, or angled, and thus its shape is no less important than its size.

3.67 A variety of chairs should be provided to permit a degree of choice; the colour of the coverings should be in harmony with the interior scheme.

Rehabilitation

3.68 It cannot be emphasized too strongly that rehabilitation of the elderly is a team responsibility. There is general agreement that it is more effective for elderly patients if treatment can be given fairly frequently and for short spells to avoid overtiring them. The objective of this approach is to reduce the patients' dependency by encouraging mobility and enabling them to regain the skills of daily living in order that they may return to the community. For those who have to remain in hospital, rehabilitation will help them to maintain their maximum level of independence. The provision of the facilities described below will ensure that treatment can be started earlier and with more effect by avoiding delays and protracted journeys to and from the Department of Rehabilitation.

3.69 The activity spaces for physiotherapy and occupational therapy can be shared between two nursing sections provided they are accessible to both but, in the event of one nursing section only being required, the full provision will be necessary.

Physiotherapy space

3.70 Treatment will include walking re-education and mobility exercises which will require the use of parallel walking bars, a wall bar and a high mat. Ideally, the equipment should be located in an open area which could be adjacent to a circulation or day space: it should not be accommodated either wholly or partially within the day space. The area should be at least 16 m^2 with one clear dimension of 4500mm for walking re-education.

Occupational therapy – activities of daily living

In addition to treatment at the bedside and in the bathroom there is a need to provide simple kitchen facilities where practice in the preparation of beverages and snacks can take place under supervision. The area should be about 10 m^2.

Staff base

3.72 The staff base is the administration and communication centre of the nursing section and the requirements of both day and night nursing staff must be borne in mind when determining its location. It should be sited so that as far as possible the maximum possible number of single bed and multi-bed rooms (particularly those for high dependency patients) and the day spaces are within general visual and auditory observation of nursing staff in the vicinity of the staff base. It should also be visible to visitors entering the nursing section, if the above requirements permit. (3.41)

3.73 A close association with the clean and dirty utility rooms is required and an unobstructed view of the indicating lights of patient/nurse call systems and Controlled Drugs cupboard is essential.

3.74 The activities associated with the control of a nursing section include the exchange of oral and written reports and day and night use of the telephone. The provision of sound absorbing materials eg acoustic tiles will help to prevent noise disturbance to patients. The lighting should be so designed that it does not disturb patients at night.

Sanitary facilities (Refer to Common Activity Spaces document for all facilities)

WC provision

3.75 The right environmental factors have an important part to play in reducing the incidence of incontinence. (2.12) The factors which follow are important and must be taken into account.

3.76 The WC facilities (which must always include provision for hand washing) should be located so that patients have to walk no more than about 12 m from bed or day space to a WC. It is particularly important to observe this point when upgrading old buildings in which WCs have been grouped together at one end of the nursing section remote from the patient areas.

3.77 Most patients require to use the WC before or after bathing and it is important that the facility should be readily available to the elderly patients in bathrooms and showers.

3.78 Provided that there is no impingement on the circulation spaces, doors should preferably open outwards thus allowing the rooms to be marginally smaller, and making it easier for wheelchairs to be manoeuvred in and out. In practice, however, owing to planning restrictions, doors have to open inwards in most instances; allowance for this has been made in the designs of sanitary accommodation illustrated in this and the Common Activity Spaces document.

3.79 All doors should be fitted with indicator bolts having a hand-grip of suitable size for easy operation by the patient and a clear 'engaged' sign on the outside so that it can be recognised readily by patients; the bolts should be openable from the outside in an emergency. (3.25 a. iii) WC doors of a distinctive colour assists quicker recognition.

3.80 Fixed and hinged grab rails capable of giving maximum support for patients need to be provided adjacent to the WC.

3.81 A specimen-collecting WC may be required and a specially designed pan could be installed in one of the toilet cubicles nearest to the dirty utility.

3.82 Mechanical extract ventilation is essential for all WCs whether they are located internally or peripherally.

3.83 A summary of provision of WCs is given in paragraph 3.85 with a suggested distribution of WC facilities for a nursing section giving an overall recommended minimum of one WC to approximately three patients.

3.84 The precise number of WCs may be influenced or imposed by a design solution or an upgrading situation. The close proximity of day spaces to separate WCs and those contained within the bathroom and shower may reduce the numbers listed in paragraph 3.85.

3.85 The following list summarises the overall provision of WCs:

Location	*Number*	*Function*
Multi-bed rooms	4	Assisted WC and personal wash
Single bedrooms	1 (2)	Ambulant patient WC – as design requires
Single bedrooms en suite	(1)	Project option
Assisted bath/showers	3	Assisted WC and personal wash
Day spaces	2*	Assisted WC and hand-rinse
Total	10	

* Provision for day spaces will depend upon overall location of WCs (3.84).

3.86 Detailed requirements for WCs are as follows:

a. Assisted WC and personal wash

The layout of each WC should provide sufficient space at the front and both sides of the WC pan to enable one or two staff to assist patient access to the WC pan, including transfer from a wheelchair and carrying out cleansing procedures as necessary. The wash-basin etc should be positioned to meet the requirements of a patient in a wheelchair or upright chair, and the door preferably located opposite to the WC pan. One such WC should be located adjacent to, (but not leading off), or very near to each multi-bed space. If necessary, an additional such WC may be required to serve the single rooms to achieve the recommended walking distance.

b. Assisted WC and hand-rinse

Two WCs as above but with hand-rinse facilities should be provided adjacent to the day space.

c. Single bedrooms

If a WC is provided with a single room, it must be able to accommodate a patient in a sanitary chair who may require assistance.

Bathrooms and showers

3.87 Bathrooms and showers should be closely related to the bed areas and should, in the interest of economy of services, be adjacent or closely related one to another. (3.139) Easy access to clean and dirty utility areas would reduce staff time and is particularly relevant to the 1st assisted bathroom.

1st assisted bathroom – treatment bathroom

3.88 The number of clinical procedures and treatments carried out in the nursing section does not warrant the provision of a treatment room. As some procedures may include bathing, both aspects can be met by providing appropriate facilities in an assisted bathroom.

3.89 This space should accommodate one to three staff and the activities undertaken, eg transferring a patient from bed or wheelchair on to the WC or into and out of the bath using a mechanical hoist as required, or carrying out treatments. Washing and hairwashing facilities are required for a patient seated in a chair or wheelchair.

3.90 This bath is most likely to be used by patients who will also require most, if not all, their bathing procedures to be carried out by staff. Therefore it is recommended that the rim height of the bath should be at 800mm from floor level to avoid staff having to stoop. This would preclude the use of the bath by the more independent patients but a bath having a variable height facility could accommodate a variety of needs.

3.91 A curtain which can be pulled across the inside of the door will ensure that the privacy of the patient can be maintained at all times.

3.92 A shelf should be provided for the temporary holding of a small supply of clean linen and clothing as required.

2nd assisted bathroom

3.93 This Note makes provision for another bathroom containing a peninsular bath but there are alternatives and it is advisable that local circumstances and preferences are taken into account before deciding on the installation. However, if there is a preference for carrying out retraining in a domestic style bathroom and an activities of daily living suite is not readily available elsewhere, such a bathroom could be an alternative, one being provided between two or more nursing sections.

3.94 Whatever provision is made, adequate space will be required in each bathroom for one or two staff to assist an ambulant patient using walking aids, to manoeuvre a patient in a wheelchair and to enable the patient to use the bath.

3.95 The bathroom should contain a WC and personal washing facilities suitable for a patient seated in a chair or wheelchair. A curtain which can be pulled across the inside of the door ensures personal privacy for the patient whilst using the facility.

3.96 *Peninsular bath* This can be used by ambulant or

wheelchair patients who can enter the bath either independently or with the help of one or two staff. Access is provided from both sides and the end of the bath so that the patients' home situation can be simulated for retraining purposes. Various types of portable bathing aids could be used as required; the bath panelling should have a toe recess and it should accommodate a mobile mechanical hoist which can reach the bath from an end or lateral approach.

3.97 *Domestic bathroom* This can be used by ambulant patients with or without walking aids or by wheelchair patients, either independently or with some help from one of the staff. Access into the bath is possible from one side only: this provison may be considered preferable to the peninsular bath for retraining purposes. Wall-mounted grab rails should be provided to assist entry into and out of the bath with the use of various portable bathing aids as necessary.

Assisted shower and WC

3.98 The general acceptance of the use of a shower depends upon how well its design meets the user's needs. Faults which limit access to and movement within the shower cubicle, or prevent staff from showering the patient effectively whilst remaining dry themselves, will make the facility useless.

3.99 The shower will be used by ambulant and wheelchair patients with the assistance of one or two staff. Patients may be either in a sanitary chair or transferred from wheelchair to shower chair, so it is important that the design of the shower cubicle should allow ease of access and provide sufficient space for staff and patient to move.

3.100 The shower controls should be accessible to staff from the dry area. The floor gradient in the wet area to the drainage outlet should be effective, ie 1:60 and the grating flush with the slip resistant floor finish. A continuous grab rail along the wet area is essential.

3.101 The drainage outlet and the system should be of a design which does not easily become blocked by solid matter, resulting for example from cleansing patients who may be soiled. The shower room should be comfortable to users, being well heated and ventilated to reduce steaming up and condensation. Surfaces should be able to withstand the frequent exposure to moisture.

3.102 A WC and personal washing facilities for a patient seated in a chair or wheelchair will be required.

Storage

3.103 Paragraphs 3.104–3.112 deal with recommendations on storage. However, the facilities provided must meet the whole hospital operational policy for supplies and associated services.

Equipment/Supply

3.104 Space is required for the storage of a working stock of:

- general goods
- bulk packs of all disposable items eg urinals and bed-pan liners etc
- all nursing equipment eg bed accessories, sheepskins, spare pillows, spare walking aids, infusion stands etc.

Linen and clothing store

3.105 Provision for linen storage may vary from a parking space for two exchange linen trolleys to the provision of adequate shelving to accommodate a topping-up service. However, it must be remembered that whatever system is used there will be a high demand on the laundry services and the space should be able to hold up to three to four days' supply when needed to cover weekends and/or holiday periods.

3.106 This space requires security and should be readily accessible to the hospital street. It will need to be supported by one or two parking bays, in close proximity to the bed areas, for small linen distribution trolleys holding a working stock of linen.

3.107 Storage is required for a stock of indoor clothing which may be supplied to in patients in the event of relatives being unable to maintain a supply of clean clothes.

3.108 In a Type 'A' nursing section one mobile coat-rack is required for suits, skirts and dresses and one unit of racking 2000mm × 1800mm × 450mm should be adequate to hold underwear, shirts, jumpers etc, depending on the effectiveness of the personal clothing laundry services. Additional storage provision is required for Type 'B' nursing sections.

Wheelchair and equipment bay

3.109 Parking space is required for wheelchairs, telephone trolley, chair weighing-machine and spare stacking chairs, so that this bulky equipment is neither allowed to obstruct circulation areas nor is crammed into the equipment store. Walls should be suitably protected against damage by wheelchair wheels and handles. The provision of a telephone jack-point at the trolley's parking place will enable the telephone to be used there.

Clean utility (Refer to Common Activity Spaces document)

3.110 Provision is required for storage and preparation of all drugs, medicines and lotions and a working supply of clean and sterile supplies. Space is needed to assemble equipment for clinical procedures and to park the dressing and medicine trolley. It should be located adjacent to the staff base.

Dirty utility (Refer to Common Activity Spaces document)

3.111 Provision is required for storage of a working supply of disposable or non-disposable bed-pans and urine bottles; maceration or washing disinfection and disposal of containers and contents; cleansing and disinfection of some items of equipment.

3.112 Space is needed for the temporary holding of materials requiring disposal and re-processing before transfer to the disposal point to await collection, and for parking several commodes. (3.121)

3.113 As this space should be readily accessible to the bed area, it is essential that patients are not disturbed by the noise created by a macerator, particularly at night. Suitable sound-containing provisions are required, eg a sound attenuation of about 45 decibels, full height wall

between floors and application of sound-absorbing materials as necessary.

3.114 Mechanical extract ventilation will be required to remove odours as dirty and foul linen will be held here temporarily.

Pantry (Refer to Common Activity Spaces document)
3.115 This guidance assumes that there will be a centralised catering service delivering individual trays or plated meals from a central kitchen and that a central washing-up service is available. The function of the pantry is therefore limited to the preparation of beverages and light snacks, and the storage of dry foods, milk and a limited amount of crockery and cutlery.

3.116 There should be facilities for hand washing and for the disposal of waste. Space to park a catering department trolley may be required.

Nursing section office (Refer to Common Activity Spaces document)
3.117 This is required for sectional administrative work and for interviewing and discussion with relatives, patients and staff. The space should allow access for a patient and/or relatives in a wheelchair or with walking aids.

Doctor's office (Refer to Common Activity Spaces document)
3.118 An office for use by medical staff is required to serve two nursing sections. Consultants' offices would be sited according to local whole-hospital policies. (3.221)

Flower bay
3.119 Activities include the arrangement and disposal of flowers and the cleaning and storage of vases. Trolley space will be needed and there is an advantage in having the facilities accessible to visitors.

Cleaning Space (Refer to Common Activity Spaces document)
3.120 Provision is required for the storage of cleaning materials and equipment in accordance with the domestic services policies. Facilities are needed for emptying and cleaning equipment.

Disposal room (Refer to Common Activity Spaces document)
3.121 Bagged refuse for disposal, linen (dirty and foul) and equipment for re-processing will be held in this space for collection. It should be accessible from within the nursing section. Adequate ventilation is particularly important.

Staff changing

Centralised changing
3.122 Where, in accordance with whole-hospital policies, male and female staff will use central changing facilities, a small cloakroom should be provided on the nursing section for staff to hang coats and cloaks and to keep valuables secure in small lockers. A WC with a wash-basin should be associated with the cloakroom area for general use by all staff.

Decentralised changing
3.123 If, however, female nursing staff do not use central changing facilities, one curtained cubicle will be required on nursing sections to enable female staff to change in privacy. There will be a need for personal full length lockers for secure storage of clothing and valuables with facilities for the secure hanging of wet clothes. These facilities could be shared between two nursing sections.

3.124 The provision and location of separate changing accommodation for male nursing staff will have to be considered at project level.

Seminar room
3.125 Use of a seminar room is required for meetings and tutorials for all disciplines and for case conferences involving up to approximately ten persons. Activities such as viewing X-ray slides and films and note taking will be carried out.

3.126 One seminar room should be shared between two nursing sections primarily for the use of the department though it may be available to users on a whole-hospital basis. However, when considering the provision of seminar rooms within the department, account should be taken of similar accommodation available in the hospital's education centre or elsewhere and the extent to which such accommodation is available to the Department of Geriatric Medicine. Seminar rooms should not be unnecessarily duplicated within the department if usable facilities are available elsewhere which meet requirements.

Switchroom
3.127 This is required to house the main isolator and distribution switch/fuse-gear for the department. The room should be kept dry, well ventilated and the door should be lockable and open outwards. In order to reduce the length of circuit wiring, the switchroom should be located centrally whenever possible. (4.48) When it is possible for the switchroom and plant room to be on the same floor level as the department, then they may be combined provided that care is taken to ensure that the switch-gear is mounted clear of all pipes carrying liquids in case of leakages.

Nursing Officer's office
3.128 A Nursing Officer's span of control is likely to be up to five nursing sections and may also include the day hospital. The siting of office provision will depend on local circumstances; ideally it should be readily accessible both to nursing sections and the day hospital.

Additional accommodation

Relatives' rooms
3.129 Accommodation is required where the relatives of patients who are seriously ill can rest during the day and sleep overnight: it should be remembered that the relatives themselves may be elderly and disabled. The actual number of rooms needed for the department should be assessed in relation to similar accommodation requirements for the whole hospital complex and should be provided on a shared basis between sections and, if appropriate, with other hospital departments. Rooms

should be sited with other relatives' rooms, near to sanitary facilities but not too isolated from staff.

3.130 Where rooms are provided specifically in relation to accommodation for elderly patients, not more than one room to two nursing sections should be needed. The rooms should be capable of use for a secondary function, eg – interview, temporary office accommodation during the day when not in use by relatives. Use by other hospital departments should not be precluded. The quiet area in the day space (3.62) can also be used for additional overnight stay accommodation by relatives if necessary.

Hairdressing

3.131 Provision of suitable hairdressing facilities is essential as their use helps to increase a patient's sense of well-being. Where possible patients should go to those provided for general hospital use or to the day hospital. If there is no provision in either place, it will be necessary to provide a hairdressing service. A space containing one shampoo basin and one or two dryers on stands will be needed: facilities should be accessible to wheelchair patients.

Potential for sharing spaces and multiple use of space

3.132 The planning team should aim to achieve the optimum use of space by as much sharing as is possible without detriment to the needs of patients and staff and to the proper functioning of the spaces involved. Sharing may require some enlargement of a space and the provision of additional equipment.

3.133 The principles by which maximum use of activity spaces can be achieved as given in paragraph 3.4 can be applied to nursing sections and where two sections are in proper juxtaposition the following spaces should be shared:

Physiotherapy/Occupational therapy	(3.71)
Disposal room	(3.121)
Cleaning	(3.120)
Staff changing	(3.122, 3.123)

3.134 Consideration should also be given to sharing other activity spaces between two nursing sections *provided that the design ensures that the spaces are optimally placed and properly equipped to serve two sections, do not involve the staff in long traffic routes and comply with fire safety requirements.* Such spaces are:

Equipment/Supply	(3.104)
Clean utility	(3.110)
Dirty utility	(3.111–3.114)
Pantry	(3.115, 3.116)
Flower bay	(3.119)

3.135 Within a nursing section the following activity spaces serve a number activities:

Day space, quiet area	(3.60–3.67)
Treatment bathroom	(3.88–3.92)
Section office	(3.117)
Relatives' room	(3.129, 3.130)

Design considerations

Planning objectives

3.136 Although different categories of patients will be treated, architectural planning and environmental considerations will be the same for both types of nursing section.

3.137 The accommodation of a nursing section, consisting of bed areas, sanitary accommodation, day areas, various support rooms such as stores and some staff accommodation and circulation, should be planned to achieve the following objectives:

a. observation of patients in bed areas and day areas (3.41, 3.72)
b. easy access by patients to all facilities, particularly those in wheelchairs, and others who require assistance of 2 staff to walk (2.11, 2.15, 3.37, 3.40, 3.70)
c. sufficient turning space and access width for beds, wheelchairs and walking aids (3.9)
d. clustering of rooms in relation to usage (3.40, 3.87)
e. privacy for patients when required compatible with the need to ensure that at other times the patient should be able to see staff (3.2, 3.36)
f. compartmentation, horizontal escape routes and exits for fire safety (2.22–2.28)
g. planning of spaces so that they can be shared between sections as appropriate (3.132–3.135)
h. avoidance of extravagance in use of space and the need to design economically (Note: short-lived economy measures, which could result in costly remedies later, should be avoided. A compact, well designed nursing section with good observation can lead to savings in capital and revenue costs.)
j. adequate space for all purposes and functions, compatible with the critical dimensions and common spaces criteria (3.9)
k. distribution of WCs with washing facilities in accordance with the criteria set out in paragraphs 3.75 to 3.86
l. positioning of rooms so that the environmental requirements relating to daylight, ventilation and noise as described in this Note can be achieved.

Layout

3.138 The main group of accommodation is formed by single and multi-bed rooms described in detail in paragraphs 3.44 to 3.58. Positioning bed areas and layout of rooms will be influenced by the need for observation and, to a lesser degree, by aspect and prospect.

3.139 In order to achieve economy in service runs, sanitary units should be located together as far as practicable, provided the distribution and distances fulfil the functional needs, eg WCs to be next to a shower or bathroom to enable the supply and disposal services to be grouped for more economical provision.

3.140 There are two groups of support rooms: one formed by the staff base, clean and dirty utilities and pantry, and the other comprising offices, stores and staff rooms. The first group, the essential working rooms, should be closely related to bed areas, with the second group occupying the remaining space in the section, ie

with no particular preference as to position within the section except that the staff cloakroom should be situated near the main entrance to the nursing sections.

Day hospital

General functional aspects and requirements

Purposes and functions of the Day Hospital

3.141 The overall aim of the treatment and care of elderly people is to enable them to live independently in the community and the day hospital is a major form of support for this purpose.

3.142 Day hospitals are an integral part of the district geriatric service and should provide for:

a. the investigation and diagnosis of patients for whom admission to hospital would otherwise be necessary or who are too frail to undertake repeated visits to the out patient department;

b. certain medical and nursing treatment, which would otherwise require admission to hospital;

c. treatment, including rehabilitation, of some patients before admission to shorten their stay as in patients or after discharge from hospital;

d. attendance of some in patients, particularly those nearing discharge;

e. clinical administration on a multi-disciplinary basis of the hospital geriatric service for the district.

3.143 A geriatric day hospital differs essentially from a local authority day care centre for elderly people where activity is organised in a more general way primarily in order to meet social needs. Whilst some training in special skills is given at the day hospital, the emphasis will be on medical investigation, diagnosis, treatment and rehabilitation, and it is not intended that patients will attend on a long-term basis.

3.144 Multi-disciplinary case conferences, including staff from the Community Health and Social Services, may be held regularly in the seminar room of the day hospital which will also be used for in-service training and health education.

3.145 Medical investigation, diagnosis and interviews with social workers are important aspects of work undertaken in the day hospital. Frequently laboratory investigation, X-ray and E.C.G. examination are required and sometimes the opinion of other consultants will be needed. Immediate nursing treatments may be indicated. For all this to be possible at least one day hospital in each district must be on the same site as the district general hospital diagnostic and out patient departments.

3.146 Rehabilitation plays a major part in the activities of the day hospital and aims to restore patients disabled by illness or injury to a maximum degree of independence. This goal requires the particular skills of physiotherapists, occupational therapists, speech therapists and chiropodists. Disabilities need to be assessed in relation to the activities of daily living such as standing, sitting, dressing, washing, feeding and getting in and out of bed, and the deficiencies improved as far as possible. These aims can be achieved in the day hospital by activities principally in the form of individual and group exercises, chiropody treatment, bathing, hairdressing and social rehabilitation. Indeed, in the day hospital everything that the patient does – walking along corridors, having lunch, taking part in remedial exercise or in group projects – ought to involve a therapeutic activity designed to improve health and overcome disabilities, and the whole staff of the day hospital should be concerned with the rehabilitation process.

Patients attending

3.147 Patients from the community attending the day hospital fall into the following main categories:

a. those who can remain in the community if supported by varying degrees of medical and nursing care and therapy received in the day hospital;

b. those who are awaiting admission but for whom some investigation and treatment can be started in the day hospital;

c. those who still need some medical and nursing care and treatment or rehabilitation following a period of in patient care.

3.148 In addition, some in patients could use the day hospital and would mainly be:

a. those nearing discharge, particularly if they are likely to be using the day hospital subsequently and thus need to become familiar with it;

b. those requiring assessment in the Activities for Daily Living Unit.

Statistics and size

3.149 The reqirement for day hospital places is currently considered to be two day places per 1,000 of the population aged 65 and over. A range from 25 to 40 places is likely to meet most requirements on the main district general hospital site. As a general rule, day hospitals with more than 40 places have been found to be unwieldy and in many areas function inefficiently because of transport problems. If there are less than 20 places, the services are liable to become uneconomic.

3.150 This guidance relates primarily to the needs of a 40 place day hospital and can be suitably adapted for 25 places based on the schedule of activity spaces given in Chapter 5. The number of places is normally equivalent to the maximum number of patients attending at any one time, though careful programming of the use of space may enable the numbers to be slightly exceeded if required.

3.151 Additional day hospital places to meet district needs may also be provided on other district general hospital sites or in community hospitals.

Organisation and workflow

3.152 A day hospital will open on days and at times to suit local needs. It is anticipated that most patients will arrive during the first hour or two in the morning and leave at different times during the afternoon. The times of attendance will largely be dictated by availability of transport.

3.153 The likely organisational pattern of the day hospital is set out below:

a. Patients will arrive in groups by ambulance or in ones and twos in cars; they may be ambulant with or without their own walking aids or need assistance and/or require a wheelchair.

b. Most patients are likely to require the use of the WC immediately on arrival.

c. After removing outdoor clothing, with assistance as necessary, each patient will pursue the individual programme prepared for his or her needs. This may involve medical consultation, nursing care, occupational therapy and physiotherapy. A period of rest in the sitting area may be required for any patient fatigued by the journey.

d. Coffee and tea will be served in the dining area during the course of the morning and afternoon. After lunch, and as required during the day, patients may rest for a period in the sitting or other suitable area.

e. During the afternoon individual patients may carry on with their programme and/or participate in group therapy and/or social activities.

f. Towards the end of the afternoon the patients will be prepared for returning home and to await the arrival of transport.

Transport

3.154 The effectiveness of a day hospital depends on the arrangement for the transport of patients. The local ambulance service will normally be responsible for arranging transport for the majority of patients who need it, but there may be scope for encouraging and seeking the help of relatives and voluntary agencies. In order to ensure that a day hospital has adequate transport facilities, it is important that the local ambulance service and voluntary agencies, as appropriate, are consulted at early planning stages.

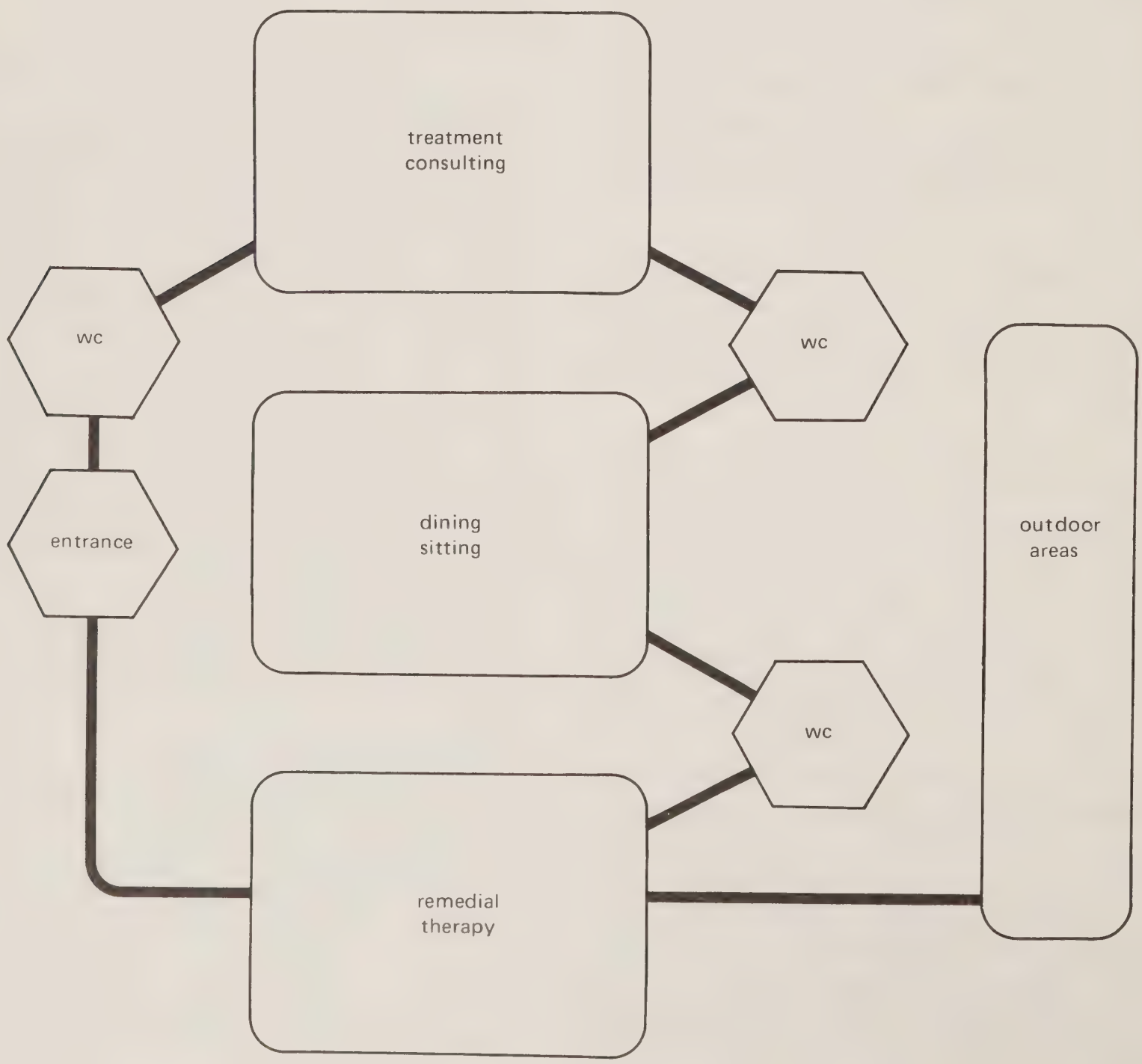
Planning relationships

3.155 The relationship between the day hospital and other hospital departments, and between the various activity spaces within the day hospital itself, should be considered at early stages of planning and design with other hospital departments.

External relationships

3.156 Functionally, the day hospital could be regarded as a self-contained section, but it will need to make use of most out patient facilities, the hospital radiodiagnostic, pathology and other diagnostic departments, the main hospital supply, disposal, catering and cleaning services

Diagram 2
Grouping of day hospital activity areas
(para 3.158)



and any other general service arrangements. Whilst almost all physiotherapy and occupational therapy should be undertaken within the day hospital, there are advantages in siting the day hospital with easy access to the Department of Rehabilitation so that there can be flexibility in treatment of patients by making use of certain facilities in that department and all available therapy staff.

3.157 The following requirements which are listed in order of priority, should be taken into account as far as applicable:

a. easy access for vehicles

b. sited on the ground floor with its own external access

c. close to the nursing sections for elderly people

d. close to the hospital's main rehabilitation facilities

e. close to diagnostic facilities, including the out patient department.

Within the day hospital

3.158 There are five main clusters of activity spaces in the day hospital:

a. Entrance/Reception/Records

b. Dining/Sitting and Pantry

c. Occupational therapy and Physiotherapy

d. Consulting/Treatment and service area

e. Clinical administration

Note: To ensure ease of management for staff and uncomplicated communication links for patients, it is advisable that the dining, sitting and pantry spaces form the central core of the day hospital, the remaining clusters having access from it.

3.159 The patients' WCs should be distributed throughout the department so that the distance to them from patient activity areas is about 12 metres.

Design and functional requirements

Main entrance

Lobby

3.160 A lobby formed by two sets of double doors is required to protect the entrance area from the outside. An external canopy, of adequate height to accommodate an ambulance, should be provided to give some shelter from the weather whilst the patients are leaving ambulances or cars. The design of the external entrance may need to incorporate some form of side screening so that there is protection from local prevailing winds.

3.161 Access to the entrance hall should be level as far as possible but otherwise ramped.

3.162 To prevent unnecessary entry of dirt with consequential cleaning problems a dirt trap area or barrier zone should be provided within the lobby space by provision of a heavy duty scraper-type soil-collecting mat. This should be of sufficient size to ensure that an adequate number of steps are taken, or that the wheels of trolleys etc, revolve several times before entrance to the interior is reached. The barrier zone selected must not create changes of surface levels nor impede patients with a shuffling gait, or those who may be using walking aids or in wheelchairs.

An external canopy over the front entrance of the day hospital provides shelter for patients alighting from transport.

A lobby formed by two sets of double doors with a dirt trap in between to protect the entrance from outside and reduce the entry of dirt.

Reference should be made to the Floor Covering Study Group report issued with HN(78)32 which includes dimensional requirements.

Entrance hall

3.163 The entrance space beyond the lobby should provide for several functions which will take place more or less at the same time. It should therefore be as open as possible with clearly defined spaces serving the various functions of reception, clothes hanging, waiting, wheelchair park and WCs.

Reception and administration

3.164 An office with an open counter facing the entrance will be required for the reception and guidance of patients and escorts, the supervision of the whole entrance area, the general administration of the day hospital and the secure storage of current patients'

A counter overlooking the entrance area serves as the reception point for patients.

records. Staff in the office should be able to oversee the vehicular approach to the front door. The counter height should allow patients in wheelchairs to communicate with receptionists.

Clothes hanging and storage of valuables

3.165 This provision should be in a bay or recess visible to reception, where patients (with assistance as required) can remove or put on outdoor clothes. Storage with an identification system will be required for hats and coats. Secure storage for the safe keeping of handbags and other valuables will be needed. A lockable cupboard in the reception office or a bank of small security lockers are possible ways of making this provision.

Waiting space

3.166 A small space within the entrance complex should be set aside for a few patients to sit whilst awaiting the arrival of their transport, but it is expected that the majority of patients will wait in the adjacent sitting area.

Wheelchair park

3.167 Several wheelchairs and walking aids should be accessible within the entrance area for the use of those patients entering or leaving the hospital. Walls should be protected against damage by wheelchair wheels and handles.

WCs

3.168 There should be two WCs adjacent to the entrance area available for use by patients immediately on arrival. (3.197)

Sitting, dining and pantry spaces

3.169 The dining and sitting spaces comprise the central point of the day hospital for the patients and it is here that they will gather after their individual programmes for relaxation, dining, group therapy and social activities. These activity spaces need to be closely associated one to another but because of incompatibility of some functions, open planning for the whole area is not desirable.

3.170 If a trolley shop service is likely to be provided for the day hospital the trolley can be parked in the dining or sitting space, as convenient, to enable patients to make their purchases.

Quiet space

3.171 It is thought advisable in the 40 place day hospital to provide an area where patients who need to rest may do so quietly apart from the scene of general activity. This space should accommodate up to five patients, some of whom may be in wheelchairs and should contain a selection of comfortable chairs. This quiet space should not be remote from staff supervision.

General sitting space

3.172 A sitting space is required where patients may rest after meals or treatment and wait for transport and where staff can arrange group therapy and social activities. This space should be attractively decorated to give a homely atmosphere, be adaptable to meet the various functions and accommodate no fewer than 20 patients (12 for the smaller hospital) including some in wheelchairs. There is an advantage in planning this as an open extension of the occupational therapy area so that one larger space can be formed for activities requiring greater space ie. some group and social activities. The provision of movable decorative screens would enable the staff to divide the overall space for the various activities.

3.173 Space allocation for the general sitting area, together with the quiet space or room, should be 1.3m^2 per place, exclusive of circulation space.

Dining space

3.174 This will be used for serving mid-morning and afternoon beverages and lunch to patients. The preparation before meals and the subsequent clearing up makes it undesirable for this space to be utilised during these periods for other purposes. The use of this space for occupational and diversional therapy conflicts with catering and domestic service needs and considerably reduces the effectiveness of remedial therapy. Patients should be encouraged to vacate the dining space after meals and move to the sitting space for rest after lunch rather than remain at the dining tables. A space allocation of 2.1m^2 per place is recommended.

3.175 The dining space should be adequate for the serving of beverages and lunch at one sitting. It should allow staff to circulate between tables to serve meals and assist patients, as necessary, and provide for the accommodation of some patients in wheelchairs.

3.176 Whilst the dining space need not necessarily be planned openly with the adjacent space, which would normally be the sitting areas, there must be an opening of adequate size to enable patients, assisted if necessary, to move freely in and out of the dining space. If there are doors they must be double doors of adequate size with stand-open devices to achieve the required movement. Ready, though not direct, access to a WC is required.

Pantry

3.177 This Note assumes that there will be central catering facilities and a central washing-up service and that the patients will receive food served by the staff from an insulated bulk food trolley. Alternatively there may be a

plated meal or tray service. Beverages will be prepared in the pantry where there will be storage of dry goods, milk and limited crockery and cutlery. It needs to be large enough for two people to work at the same time; adequate ventilation is required.

3.178 There should be facilities for hand-washing and disposal of waste, and space to park the catering department trolleys. A hatch between the pantry and dining area is an advantage to staff when serving meals and beverages.

Occupational therapy

3.179 Ideally, this space should be planned adjacent to the sitting area so that the activities in one space can, when necessary, be extended into the other. (3.172) It should be of adequate size to accommodate up to 14 patients (10 in a smaller hospital) including some in wheelchairs, requiring assessment and rehabilitative work under the supervision of two to three staff. Suggested room areas should be based on 1.8m^2 per place for 40 places, 2.2m^2 per place for 25 places.

Group treatment and recreational activities in the occupational therapy area; a soft floor finish is desirable.

3.180 Facilities are required for cleaning the equipment, hand washing, storage of work in progress, tools and some materials. Ramped external access to a courtyard or hospital grounds is desirable; steps are not suitable.

Occupational therapy workshop

3.181 An enclosed space, attached to the main occupational therapy area, will be required for noisy, dirty and odorous work. This should be large enough to accommodate a small work-bench (carpentry) and tool cupboard, one or two patients who may or may not be in wheelchairs, and a member of the staff. Provision for the storage of handicrafts is also required.

Outdoor activities

3.182 The availability, access to, and use of part of the hospital grounds adjacent to the day hospital for occupational therapy widens the range of activities which aim at improving function and mobility. Gardening and other outdoor pursuits can be used to revive or develop new interests and provide mental stimulation.

3.183 The following facilities are suggested:

a. pathways, having a variety of textures and wide enough for wheelchairs;

b. raised flower beds approximately 700mm from the ground;

c. open ground for growing flowers and vegetables;

d. sitting area;

e. an area suitable for a greenhouse if required;

f. a continuous footpath connecting all outdoor activity areas.

Activities of daily living (A.D.L.)

3.184 The spaces for these activities should be accessible from the main occupational therapy space to ensure ease of management. The purpose of these rooms is to provide a full range of everyday domestic fittings and equipment for the assessment and training of the disabled in the activities of daily living. The main rooms are:

Bathroom

Bedroom

Kitchen

Utility/Laundry

3.185 The bedroom should be square to allow alternative layouts of furniture which should be freestanding and domestic in type. The kitchen should be equipped with standard domestic gas and electric cookers and worktops (one of which can be adjusted for height) for standing and seated patients. Socket outlets should be provided at various positions in relation to worktops. All rooms should have entrances from the occupational therapy area.

Activities of daily living assessment require a kitchen equipped with a comprehensive range of domestic fittings.

3.186 In the interests of hygiene, clothes-washing facilities should not be provided in the kitchen where food is prepared and eaten. Where required, a utility/laundry space should be provided adjacent to the rooms for the activities of daily living where patients who may bring personal washing with them may undertake to launder it as part of their rehabilitation programme. If any patient's personal clothing becomes accidentally soiled during the day then it could also be cleaned here by the staff.

3.187 If a utility space is not provided with the A.D.L. suite, additional facilities should be provided in the dirty utility to enable accidently soiled clothing to be cleaned and dried. (3.201)

Physiotherapy

3.188 This activity space should be self-contained but with direct access to either or both the occupational therapy and sitting spaces. It should accommodate up to ten patients, including some in wheelchairs, who will undergo walking re-education with a variety of aids or individual and group therapy under the supervision of two or three staff using space-occupying equipment in the open area. There should be provision for individual treatment in the privacy of curtained cubicles. Facilities will be required for staff hand-washing and storage of small items of equipment. The space should contain a movable exercise staircase with adequate head-room, fixed handrails on walls, parallel bars etc, with sufficient space for access to this equipment, for walking re-education and for general circulation.

Adequate space is required for individual and group exercises. A slip resistant floor finish which also looks slip resistant is essential.

3.189 The overall area for this space should be based on the provision of 2.2m^2 per place for 40 places and 2.8m^2 per place for 25 places.

Remedial therapists' office

3.190 One office should be provided for use by the senior occupational therapist and physiotherapist for administrative purposes. Confidential counselling of patients (who may be in wheelchairs or have walking aids) and/or relatives will take place in this office. It should be readily accessible to both therapists.

Remedial therapists' store

3.191 One store for the use of therapists will be required to hold the following:

occupational therapy materials and equipment

physiotherapy equipment and walking aids

wheelchairs for assessment purposes.

It may be desirable to sub-divide the store so that glues, paints, etc. can be kept separate from the physiotherapy equipment.

Speech therapy/consultation, consultation/examination rooms

3.192 Assuming that out patient clinics for the Department of Geriatric Medicine will be held in the main district general hospital out patient department, one combined consulting/examination room and one speech therapy/-consulting room with two examination rooms should meet the requirements of the 40 place day hospital. For the 25 place day hospital a speech therapy/consulting room with the two examination rooms will be required.

3.193 The consulting room should be designed for speech therapy and sited accordingly. With its associated examination rooms it should also be available for consulting or interviewing on a programmed basis. Although this room will not be regarded as the base for the speech therapists, some secure storage for equipment will be needed and the room will require sound attenuation to 40 dbA but not exceeding 45 dbA.

3.194 One of the examination rooms, by providing a variable height bed in place of an examination couch, can also be used as a rest room for any patient who may require this facility. Consulting/examination rooms which may be overlooked should have means of ensuring privacy.

Treatment rooms

3.195 One treatment room will be required, where enemas and other similar treatments may be given and where clinical procedures associated with stoma care can be carried out whilst the patient lies on a variable height bed. A WC en suite with this space is essential. To ensure that there is effective ventilation at all times mechanical ventilation will be required.

3.196 A second treatment room where various clinical procedures can be carried out will also be needed, with facilities to enable the patient to receive treatment lying down on a couch or sitting in a chair or in a wheelchair. In addition to medical and nursing procedures, dental inspection and some chiropody will be carried out in this space on the assumption that complete facilities for these services are available elsewhere in the district. If complete services are not available for chiropody, a fully equipped activity space will need to be provided for this service.

Sanitary facilities (Refer to Common Activity Spaces document)

3.197 The facilities required are indicated below:

a. WCs

WC facilities should be located within this department so that no patient has to walk more than about 12m to the WC from the day spaces, consulting/treatment or remedial therapy areas. Two WCs adjacent to the main entrance are essential. The ratio of provision (excluding those in bathrooms and showers etc) should be approximately 1 WC per 6.5 places, ie 6 for 40 places and 4 for a 25-place day hospital, but ensuring that the minimal walking distance is observed. Handwashing facilities should be provided in each WC which should be designed as described in paragraph 3.86.

b. Assisted bathroom and WC

The bathroom will be used by ambulant patients requiring minimal personal assistance, and for those who will transfer from a wheelchair with assistance, including the use of a mechanical hoist as required. Personal washing facilities are required, suitable for a patient seated in a chair or wheelchair.

c. Assisted shower and WC

This will provide alternative facilites to a bath.

Hairdressing

3.198 The facilities provided in the day hospital would also meet the needs of in patients and may be used by a full or part-time hairdresser. (3.131)

Clean utility (Refer to Common Activity Spaces document)

3.199 This space should be adjacent to the treatment rooms and be readily accessible to the consulting suite.

Dirty utility (Refer to Common Activity Spaces document)

3.200 The likely extent of use of disposable bedpans and urinals does not justify the provision of a macerator. The occasional need can be met by providing a liquid waste disposal unit and appropriate storage for a few non-disposal bedpans and urinals. Urine testing facilities will be required and the WC nearest to this space could be of the type suitable for collecting specimens.

3.201 If a clothes washing facility is not available within the Activities of Daily Living Suite (3.186, 3.187) appropriate provision should be made within the dirty utility space so that accidentally soiled personal clothing can be cleaned and dried for the patient to take home.

Storage

Linen and clothing

3.202 The facilities provided for linen storage must meet the whole hospital operational policy for the supply and laundry services. This may vary from a parking space for one exchange linen trolley to the provision of adequate shelving to accommodate a topping-up service. Additional storage is required for a small standby supply of indoor and outdoor clothing and shoes which can be supplied or loaned to patients as and when the need arises.

General store

3.203 Storage facilities will be required for:

stationery
disposables
sundry items of equipment and supplies.

Seminar/staff room

3.204 This activity space should be used for case conference discussions and educational purposes by the hospital specialist, primary health care and social services staff concerned with the care of elderly people for the district. The space should accommodate up to 12 people. It should also serve as a staff rest room.

Offices (Refer to Common Activity Spaces document)

3.205 Additional offices are required within the day hospital for the following:

a. Unit office

This will be used by the member of staff who is responsible for the day-to-day running of the day hospital.

b. Office/Interview

This space should be available for general use as required by staff from the hospital, community and social services who need confidential office/interview facilities whilst they are in the day hospital.

Staff changing

Centralised changing

3.206 Where in accordance with whole hospital policies male and female staff use central changing facilities, a small cloakroom should be provided for staff to hang coats, cloaks and to keep valuables secure in small lockers. A WC and wash-basin should be associated with the cloakroom for staff use.

Decentralised changing

3.207 If however female staff do not use central changing facilities one curtained cubicle will be required to enable staff to change in privacy. There will be a need for personal full length lockers for secure storage of clothing and valuables with facilities for the secure hanging of wet clothes.

3.208 The provision and location of separate changing accommodation for male nursing staff will have to be considered at project level.

Disposal room (Refer to Common Activity Spaces document)

3.209 Securely bagged refuse for disposal, and linen and equipment for reprocessing, will be held in this space for collection. It should be accessible preferably from within the day hospital. Adequate ventilation is required.

Cleaning space (Refer to Common Activity Spaces document)

3.210 The cleaning of the day hospital will be in accordance with the domestic services operational policy

and generally, it will take place when the day hospital is closed. Minor cleaning activities may have to take place during periods of patient occupation and facilities will be needed for emptying and cleaning equipment, as well as for the storage of a cleaning trolley with a working supply of cleaning materials.

Switchroom

3.211 Switchgear is preferably wall-mounted; consequently, a shallow but wide cupboard, with doors along the length of the front, is preferred. The doors should open on to a corridor at one of its wider parts, which is usually consistent with the preferred location near the centre of the department. (4.48)

Potential for sharing space

3.212 Methods of achieving optimum use of space are described in paragraphs 3.3 and 3.4. There is probably little scope for the sharing of facilities with other departments but within the day hospital certain spaces can serve a number of activities. Examples are:

Sitting space/Occupational therapy (3.172, 3.179)

Speech therapy/Consulting/Examination/Recovery (3.192–3.194)

Treatment rooms (3.195, 3.196).

Design considerations

3.213 All the major activities of the day hospital have a common characteristic of constant movement: staff and patients moving from place to place, staff moving around patients using therapy equipment, moving equipment from storage to place of use etc. All of this requires sufficient space if difficult working conditions are to be avoided. Although space requirements to accommodate such a constant flow of traffic are difficult to quantify, this characteristic must be taken into account both in terms of space and in terms of planning relationships if the day hospital is to function efficiently. A compact design will provide good observation, reduce travel distances for patients and staff and increase efficiency.

3.214 In addition to being an effective area of work, the day hospital should be pleasant in scale and atmosphere. It is important that the design of the interior should be considered as a whole to create the best environment with finishes, lighting and furniture being the essential ingredients of the design. Colours of furniture and fabric should not clash with overall design concept. The functional demands of activities of dining and quiet rooms suggest enclosure with some glazed partitions to ensure the necessary sound insulation. The occupational therapy area and the sitting area need to be open in order to achieve better utilisation of space insofar as this is compatible with the building and fire regulations. Orientation towards an active outside view is desirable.

3.215 Good appearance of finishes should combine with durability, economy in maintenance (3.5) with resistance to fire and avoidance of noxious fumes in the event of fire. Furniture and equipment should also be simple and free from dangerous projections and must be strong enough to act as a support for a patient. Continuous handrails must be provided along walls in areas frequented by patients. Floor surfaces should be slip resistant, look safe and be suitable for patients with walking aids.

3.216 As a general rule, there should be no differences of level throughout the building and ramps not steps should be provided at all entrances. All external doors should be draught-proof and be protected by a canopy.

3.217 The activities in the day hospital suggest that certain space grouping will ensure a more effective use of space with good flow movements ie short routes with fewer crossed lines of traffic and the best arrangement of equipment and furniture. Groupings which appear to work well in relation to the sequence of activities during the day are:

a. entrance, cloaks, waiting, records;
b. sitting, dining, occupational therapy, A.D.L, physiotherapy;
c. interview, consulting/examination, treatment utilities.

Administration: Department of Geriatric Medicine

General functional aspects and requirements

Purposes

3.218 The efficient administration of a district geriatric service plays a vital role in linking the hospital services for elderly people with those in the community. The administrative centre will provide the facilities to enable the clinical administration of the Department of Geriatric Medicine to be carried out centrally.

3.219 It will be concerned with:

a. the use of all beds (acute, rehabilitation, continuing care, planned short-term admissions) for the elderly patients in the district;

b. general liaison in respect of day and in patients;

c. requests for admission to hospital and the organisation of visits to elderly patients under other consultants;

d. requests for domiciliary visits;

e. day-to-day liaison and co-ordination with members of primary health care teams, social workers etc;

f. organisation of more formal case conferences;

g. information about the facilities of a district loan equipment store.

Organisation

3.220 Adequate accommodation will be required to enable the administrative aspects of the service to be carried out by all the disciplines involved with the care of elderly people. The guidance covers the anticipated requirements for a typical district with a population of about 200,000.

3.221 A reasonable level of staffing for a population of about 200,000, with an average 14% proportion aged 65 and over, would be three whole-time consultants in geriatric medicine or an average of about one consultant to 100 beds. Additional staff are required where there is a considerable commitment to teaching and research and in districts that have a higher than average elderly population, a static rural catchment area or inhabitants with a lower than average socio-economic status. Each whole-time or maximum part-time consultant based in the department requires an office of his own. However, other consultants should use office, interview or consulting room accommodation available elsewhere within or adjacent to the department in which they can write up their notes etc. An office will be required for senior registrars but junior medical staff should use the doctor's office provided on nursing sections. (3.118, 3.230)

3.222 The number of people required to administer and co-ordinate the service provided by the department will depend on the workload. This will be related to the population in the district, and to the percentage of people over 65. Normally, a minimum of two to three people will be needed, each requiring a separate office as a considerable amount of their work is concerned with discussing patients' needs with various health and social workers, both from within the department and the community. Such activities, which may be on the telephone or on a personal basis, need to take place in reasonable privacy.

3.223 Offices will be needed for secretarial/clerical/typing staff required to support the work of the consultants and those administering and co-ordinating the service. Whole hospital policies may provide for such staff to be available from a central point but this Note assumes that the staff concerned will be situated within the department and includes accommodation accordingly.

3.224 The social work service is provided by the local authority and the number of social workers involved in any district will depend upon: the pattern of provision, eg whether by a specialist full-time social worker for elderly people, or by a number of social workers with mixed caseloads; the amount of community-based social workers with hospital patients, and the local resources and facilities. It is therefore very important to consult the local authority social services department planning sections as early as possible about local requirements for social work accommodation. The need to provide accommodation for secretarial support staff should not be overlooked.

3.225 Where social workers are based in hospital accommodation, offices will be required for those employed full-time. Part-time officers should have accommodation which can be utilised by health visitors, by other staff from the community services, or used for other suitable purposes. The guidance assumes that a full-time and part-time social worker will use hospital accommodation. (3.232)

Siting

3.226 The preferred siting for all the accommodation needed is adjacent to the day hospital on the main district general hospital site containing the acute geriatric in patient nursing sections. In this event the accommodation should be located with the administrative offices provided specifically for use by the day hospital so that sharing of facilities can take place where possible and duplication of accommodation avoided.

3.227 Other locations for the required accommodation would be adjacent to in patient nursing sections or elsewhere on the district general hospital site, eg in an upgrading situation.

Design and functional requirements

Administrative offices

3.228 A separate office will be required for each officer to carry out desk work, interviewing, and other associated duties in connection with the administration of the service.

Consultants' offices

3.229 These are required for the personal use of each whole-time or maximum part-time consultant.

Senior Registrar's office

3.230 This is required to enable senior registrars to carry out their clinical duties, and to enable them to undertake the paper work and reading associated with research.

Office(s) for support staff

3.231 The office or offices should be shared and should be furnished to meet the needs of staff carrying out the clerical and typing work. Adequate storage facilities will be required.

Social workers' accommodation

3.232 If it is decided that social workers should be based full-time in the department, each will require an office and the use of a separate interview room. For part-time social workers, or those based elsewhere in the hospital, a shared office will suffice, with access to an interview room.

Community staff

3.233 Depending on local policy, a community base may be required for community liaison nursing staff. Staff should make use of any spare capacity in accommodation provided for social workers and be encouraged to use the staff/seminar room. Community staff should also have access to an interview room.

Staff WC and hand-rinse

3.234 A WC and hand-rinse facilities will be needed for the staff. The extent of sharing such facilities provided in the day hospital or elsewhere in the vicinity will depend upon the location of the administrative accommodation and should be considered in the overall planning.

4 Engineering services

Note: Documents referred to by number in this chapter are listed at the end of the chapter. They are numbered in order of first reference, repeated references retaining the same number.

General Considerations

Installation and economy

4.1 Engineering services should be designed to obtain the optimum benefits from the capital invested. Different options of design should be considered with related consequential revenue costs using Present Worth techniques, due consideration being given to ease of maintenance and minimum interruption of services whilst repairs or future extension work are being carried out.

4.2 Services design parameters should include diversity factors which reflect the every day usage and average winter conditions to which the department will be subjected. The aggregation of simultaneous worst conditions will produce a design which will be excessively costly both initially and during operation.

4.3 The distribution of mechanical and electrical services to final points of use should be generally flush employing a ceiling void and a 200mm wide perimeter zone under window sills. Heat emitters should be contained within the latter and critical dimensions should be taken from the boundary of this zone. For costing purposes the 200mm band, which includes the floor area occupied by minor vertical engineering ducts is included in the building circulation provision.

4.4 User requirements, working conditions and arrangements as exemplified in the Activity Data sheets should be carefully considered when placing services, components and outlets. Where they are for patient operation they should be of the simplest pattern.

General safety

4.5 Engineering components, pipe work etc particularly in areas to which the patients have access should be located to avoid risks of accidents from collision with protuberances or contact with hot surfaces. Similarly, precautions should be taken against interference with engineering services by patients and non-engineering staff, eg concealing switch/fuseboards in discrete cupboards.

Fire safety

4.6 Detailed recommendations for the Fire protection of health buildings are given in HTM 81,[1] Fire Safety in New Health Buildings (currently in preparation) and the design of the engineering services should accord with these recommendations.

4.7 Guidance may be obtained from HTM 82[2] (in preparation) and BS5839 Pt 1[3] on means of detection and alarm and advice should be sought by the architect, engineer and other interested parties from the Chief Officer of the local fire authority at an early planning stage.

Noise

4.8 Engineering services pipes, ducts etc can transmit noise and steps should be taken to prevent excessive noise transmission. Whether the noise is generated by the engineering services or otherwise, the means of control advocated in Hospital Design Note 4 should prove adequate.[4,5])

Control access

4.9 Engineering distribution, control and isolation devices should be located where easy access may be made from circulation rather than working areas.

Mechanical services

General

4.10 Mechanical services commence from the point of entry into the department where isolation and metering facilities, as required, should be provided for drinking water, cold water, domestic hot water, heating and medical gases. The installation within the department comprises the distribution of these services to all final outlets, including controls, all permanently connected plant and appliances and connections to special purpose equipment.

4.11 The Activity Data 'A' sheets give values of room temperature, air change rates, hot water service temperatures etc for individual spaces, under "Technical Design Data". The 'B' sheets give the disposition of engineering outlets for the activities described.

Heating

4.12 Space heating requirements can be met by a low temperature hot water radiator or convector heating system operating at a temperature so that heat emitters in patient areas do not exceed a touch temperature of 50°C; pipes should be adequately lagged and protected. Thermostatically controlled fan convectors may be used where their noise is not objectionable and where space is restricted or the heating load is particularly variable.

4.13 Radiators or convectors should normally be placed under windows and against exposed walls with sufficient clear space between the top of the heater and the window sill to prevent curtains draping over the heater, and sufficient clear space underneath the heat emitter to allow cleaning machinery to be used. Where heaters are installed on external walls, back insulation should be provided to reduce the rate of heat emission through the building fabric.

4.14 Overall temperature control should be divided into zones related to each major elevation of the building, but where finer individual room control is required, remote sensor thermostatic radiator valves may be used. These valves should be capable of operating to pre-set maximum and minimum temperature settings and should be tamper-proof. Thermostatic radiator valves with built-in sensors frequently give unacceptably inferior control when connected to a modulated temperature system. In the day hospital the regulation of internal temperature round the clock should provide adequate warmth during hours of occupation but only background (frost protection) heat at other times. When thermostatic controls call for heat outside the heating season, eg on a cool summer day, then heat should be available.

4.15 Regular heat gains, occurring during the occupancy of the building, should be assumed to be contributing towards the heating load. Should such heat gains be likely to cause excessive room temperatures, then means should be included to dissipate the heat, usefully if possible.

4.16 After satisfying the Building Regulations[6] on the degree of thermal insulation provided, consideration should be given to the economics of additional insulation to the ground floor slab and to the roof particulary where accommodation is located in a building of low rise construction. Where there is a solidly constructed ground floor, consideration should be given to the inclusion of floor insulation for patient comfort.

4.17 A properly designed and installed heating system should provide adequate warmth for the accommodation concerned and supplementary heating should not normally be required. However, if needed to satisfy a few individual areas, individual room heaters may be provided.

Ventilation

4.18 In the main the accommodation should be naturally ventilated, but some mechanical ventilation may be necessary to provide satisfactory conditions. Factors which affect natural ventilation are local wind patterns, building orientation, type and size of window openings, the latter requiring careful joint consideration by architects and engineers. Mechanical ventilation requirements arise from the inadequacy of natural ventilation, and values to meet all requirements are given in the Activity Data 'A' sheets. The degree of ventilation required to dispel or adequately reduce odours is not capable of clear definition, but mechanical ventilation is expensive in terms of initial and running costs and care should be taken to ensure that over-provision does not occur.

4.19 Mechanical ventilation should be provided in areas where it is required by Building Regulations,[6] particularly WCs, the extract ducts from which should, wherever convenient, be grouped together, and the fans provided with a dual motor and automatic changeover facility. Where WCs are located in bathroom and shower spaces the ventilation required for the WC should be adequate for all the space.

4.20 Air movement induced by mechanical ventilation should be from clean to dirty areas, where these can be defined; there should be no significant re-circulation of air through air handling plant. Diffusers and grilles should be so placed as to prevent the formation of stagnant pockets of air in the vicinity of beds remote from windows.

4.21 Where mechanical input of ventilation is required, the fresh air must be filtered and warmed before being introduced, usually at high level, through suitable diffusers designed to avoid creation of draughts. The quantity of air introduced in this manner should equate to the extracted air less the quantity provided by natural ventilation.

4.22 Ventilation supply plant should include filters of 95% efficiency when tested with Test Dust No 2 in the manner described in BS2831,[7] and in order to reduce the frequency of replacement of filters where the incoming air is dirty it may be desirable to include additional coarse pre-filters. Filters should be readily accessible for replacement and maintenance purposes, and provided with a pressure differential indicator.

4.23 Care must be taken to ensure an adequate flow of air into any space having mechanical extract ventilation; if fresh air is used for this purpose it must be warmed appropriately, but the supply of tempered air may be obtained by fitting grilles in doors or walls connecting such spaces to corridors. Arrangements of this kind must not affect either fire safety requirements or privacy by an unacceptable level of transfer of speech or noise. (4.8)

4.24 Specific acitivities will require continuous or intermittent mechanical ventilation, and where the latter occurs, frequently at a high air change rate, eg bathrooms and treatment room, sufficient prominence in position and type should be given to the control of this facility to encourage economical use.

4.25 Ventilation discharge arrangements to the outside of the building should be located to prevent induction at an inlet point, and protected against back pressure from the prevailing wind.

4.26 With the increased value of heat energy, and improvements in building fabric insulation, the value of energy discharged from a ventilation system should be considered in relation to the cost of the recovery of such energy. Either a thermal wheel or a 'run round' system of heat exchanges or a plate type 'air to air' heat exchanger may be employed. Consideration should be given to the programmed turning off of heating in those rooms used for part of the day only.

4.27 Inlet and extract ventilation systems should be provided with local controls and indicator lamps to confirm the operation of each system. Where the timing of the use of the system is on a regular daily pattern then a time switch control with manual over-ride should be considered. For individual units eg extract fans, the indicator may be located in the control switch. Where a system is provided for a particular room the indicator should be in or immediately adjacent to that room, and in the case of a more general system of ventilation, eg core areas, the indicator would probably be best located at the staff base. Where manual controls are intended for staff use, they should be provided with labels clearly defining the function performed.

4.28 Perimeter rooms should be naturally ventilated but

those which cannot be cross-ventilated effectively should be mechanically ventilated at a rate of six air changes per hour in those parts lacking in natural ventilation. It is assumed that three metres depth from the window wall may be adequately naturally ventilated to a nominal three air changes.

4.29 Small day spaces and single bedrooms will need to be mechanically ventilated where natural ventilation may be ineffective in the removal of odours, and in these instances the ventilation rate of six air changes per hour should be allowed for the whole room.

4.30 In deep-planned areas peripheral corridors which are open along their length to naturally ventilated areas should be assumed to be naturally ventilated. Corridors separated from naturally ventilated areas by walls and doors or mechanically ventilated areas should however be mechanically ventilated; three air changes per hour should be adequate.

4.31 Core areas of deep-planned floors will require mechanical ventilation at an average rate of six to eight air changes per hour, but the 'A' sheets give the requirements for individual spaces.

Cold water supply

4.32 Cold water storage available to the department should be adequate for 24 hours' consumption at the aggregate rate of 150 litres per bed and 100 litres per place. Where storage tanks are protected, drinking water points may be taken off the same service pipes to provide water for other uses. Where this precaution is not possible however, drinking water points should be taken off the 'rising main'.[8]

4.33 In the event of water storage being in a part of the district general hospital remote from the accommodation for elderly patients, and where this is an isolated building, one sixth of the daily consumption should be stored locally, and the requirement of protected tanks must apply to both locations of storage to enable drinking water points to be supplied from such tanks.

4.34 Cold water pipes located in areas where condensation might occur thereon should be adequately lagged.

Hot water supply

4.35 The choice of hot water service heating equipment will depend on several factors, including whether the whole hospital policy is central or local water heating, whether the thermal accumulator effect of the less efficient storage calorifier is desired, the type of hardness of scale deposited from local water, and the ability to clean the differing varieties of heater.

4.36 Storage calorifiers should be used only when they are provided with internal baffles to assist stratification and the controlling thermostatic element is as long as possible and installed vertically to sense such stratification and give true modulation control. Storage calorifiers should be sized on a basis of a three hour recovery period; the quantities stored in calorifiers should be at the aggregate scale of 50 litres per bed and 30 litres per place.

4.37 The heating in bathrooms and showers should be taken off the heating system, the control being effected by a remote sensor thermostatic radiator valve. Heated towel rails are not required in these locations.

4.38 The domestic hot water for this department should be stored at a temperature of 60°C and the distribution controlled at a temperature of 52°C (±2°C control tolerance) the reduction being achieved by a suitable mixing arrangement at the outlet from the calorifier. The safety of some elderly patients could however be compromised if they are allowed unsupervised use of bathing facilities that are supplied with water at this temperature. This risk can be reduced by installing at each bath and shower outlet a locally adjustable thermostatic mixing valve, preset and locked to provide a blended water temperature not exceeding 43°C. The mixing valve should be of a type that is unaffected by changes in water pressure and should 'fail-safe' ie automatically close the hot water supply if the cold water supply fails. The provision of one mixing valve to supply a group of baths or showers is not acceptable. Vigilance will still be required to ensure that vulnerable patients using wash basins or sinks are not in prolonged contact with water at a temperature which could be marginally in excess of 52°C.

4.39 Outlet fittings for wash basins and sinks are shown on Activity Data 'B' sheets. Elbow-action taps should be provided in treatment and utility rooms and taps used by patients should have a short lever or toggle action control of a type approved by the water authority.

4.40 Thermal insulation to an efficiency of 90% should be applied to the storage cylinder but piping, excepting only exposed dead legs in occupied rooms, should be insulated to an economic thickness.

Fire fighting equipment

4.41 Fire fighting equipment should consist of hose-reels and portable fire extinguishers, depending on the adequacy of the water supply and/or the nature of immediate hazards. Such equipment should be positioned so that adequate cover is given to the whole of the interior of the accommodation. Hose-reels, conforming to British Standard 5306 Part 1 : 1976,[9] usually 30m long, should be located so that the jet of water from the fully extended hose is capable of reaching every point on the floor area without interruption. Overlapping of cover by hose-reels is preferred to the provision of additional nine-litre water extinguishers which are not always capable of extinguishing a fully developed mattress fire; nevertheless nine-litre water extinguishers should be provided to cover small areas not exceeding 200m^2. Carbon dioxide extinguishers should be provided to cover electrical risks but for other risks, eg ignited liquids or gas, either carbon dioxide or dry powder extinguishers are appropriate. Extinguishers should comply with BS 5423[10] and further guidance concerning the use of different types is given in HTM 81 referred to in paragraph 4.6.

Natural gas installation

4.42 Gas points in patient areas should be regarded as a potential hazard and provided only where a gas supply is considered essential. Each fixed item of equipment should be fed from a safety cock of the drop-lever or similar type with fixed pipe working using screwed union connectors; space should be allowed for cleaning. Where fixed gas

pipe work is inappropriate the apparatus should be connected with a safety cock, plug-in connector of the type conforming to Gas Council Drawing 1985/A[11] and also BS 570,[12] with flexible tubes conforming to BS 669.[13]

4.43 Wherever possible gas appliances should have flame-failure safety devices where the flame is visible, and these devices must be provided where the flame is not visible during normal operation, including where they have an overriding thermostatic control. Where gas appliance needs are located a considerable distance from the nearest supply, the choice of using bottled gas should be considered on economic grounds.

4.44 Notwithstanding the above requirements, gas appliances installed in areas for training or rehabilitation should be of a domestic character.

Piped medical gases and vacuum

4.45 Information on piped medical gases is given in HTM 22[14,15] and any modifying notes issued; the installation should comply fully with these requirements. (3.57)

Electrical services

General

4.46 The electrical installation will include power intake facilities, wiring and equipment for lighting and power, heating and ventilation, and connections from the hospital central system for telephones, fire alarms and their systems. A separate patients' call system will be required, and these systems should comply in all respects with the current Regulations for the Electrical Equipment of Buildings,[16] and take account of the advice given in HTM 7.[17]

4.47 Reference should be made to the Activity Space Data sheets for the values of internal illumination, disposition of outlets for power, telephones, call systems, fire alarms and clocks etc for individual spaces.

4.48 The point of entry for the electrical supply to the accommodation will be the departmental switchroom housing the main isolators, provision for metering and the main distribution equipment. Subsidiary electrical services should conform to the same pattern, and wherever possible these items should be mounted at a height to give easy access for maintenance from a standing position. This whole assembly should be positioned within the accommodation so as to minimise the aggregate cost of incoming cables and final circuit wiring. (3.127, 3.211)

Electrical installation

4.49 Conduits and cables for the electrical installation in occupied areas should be concealed using PVC insulated cable in screwed steel conduit, or trunking. External installations or any part within the building subject to external conditions, should comprise PVC insulated cables in galvanised screwed steel conduit with fittings of weatherproof pattern. Wiring ways for the telephone system should be provided in accordance with extension requirements.

Electical interference

4.50 The avoidance and abatement of electrical interference should be undertaken as advised in HTM 14.[18]

Lighting

General

4.51 Lighting should follow standard modern practice and the choice of luminaire (lighting fitting) should take account of the requirements of distribution, glare and cut-off appropriate to the space. Luminaires should be fitted with fluorescent lamps where artificial lighting is required for long periods, or in areas devoid of natural light; intermittently used luminaires may be fitted with incandescent lamps. Luminaires should be of a type which is easily cleaned and maintained, and located where readily accessible for lamp changing and maintenance, but with the over-riding consideration that good definition is provided in areas likely to be hazardous to elderly persons.

4.52 Lamps used in luminaires in areas where the medical appreciation of the skin colour of a patient is important should be of a type having appropriate colour rendering properties, ie a correlated colour temperature approximating to 4000 °K and complying with the spectral requirements given in Engineering Data Sheets DE2.1/DE2.3.[19,20] Further guidance may be obtained from the CIBS Lighting Guide: Hospitals and Health Care Buildings.[21] In such areas the colours chosen for walls, floors and ceilings should be carefully considered; architects and engineers should co-operate in this task to ensure that the decorative finishes are compatible with the colour rendering properties of the lamp, and that the spectral distribution of the colours of the light source is not unduly altered. Incandescent lighting will normally be provided in areas where a homely atmosphere is required. For those luminaires within reach of patients, the heat from the lamp should not cause the external surface to rise to a dangerous touch temperature.

4.53 Where, owing to constraints on window sizes, the recommended daylight factors in perimeter rooms cannot be achieved it will be necessary to provide permanent supplementary artificial lighting of a higher intensity for use during the day than is normally provided during the hours of darkness. Lighting designed to these higher standards of illumination should not provide too great a contrast so that staff moving from one area to another can adapt sufficiently quickly. It is recommended that the transition from day to night time use of these luminaires should be achieved by providing local switching of a portion of the lamps in each luminaire rather than by separate luminaires. (Note: 50 lux is approximately equivalent to a Daylight Factor of 1%.)

Bed areas

4.54 During normal evening hours it is recommended that the standard of illumination provided at the bed-head at normal bed height by the general lighting should be 30–50 lux. The illumination in the centre space of multi-bedded rooms should be 100 lux and should not be masked by opaque curtains extending up to the ceiling. Additional wall mounted luminaires should be located at each bed to provide a bed-head light.

4.55 Night lighting should aim at providing an indirect illumination of 0.1 lux on the pillow and for the rest of the bed area just sufficient light to enable staff to move around safely.

4.56 The avoidance of glare discomfort to patients in bed is important, and no part of a luminaire, or mirrored reflection as seen by a patient in bed should have a luminance of more than 1800 candelas per m^2 (700 candelas per m^2 for a recessed ceiling mounted luminaire); nor should the luminance on ceiling or wall from a wall-mounted luminaire exceed 170 candelas per m^2. Similarly directly perceived luminance of a night lighting luminaire should not exceed 30 candelas per m^2. These restrictions should also apply to luminaires in corridors, or elsewhere outside bed areas visible from the beds through unscreened glazing.

Staff base

4.57 The lighting of the staff base should be carefully designed to meet the needs of staff during the day and night but glare should not disturb the patients, particularly at night. An illumination of 30/100 lux on the desk is recommended during the night and 300 lux during the day.

Day areas, offices etc

4.58 Luminaires in day rooms, dining rooms and staff rooms should be domestic in character and should harmonize with the room decor, notwithstanding the overriding requirement to install fluorescent lamps where lengthy usage is envisaged.

4.59 In rehabilitation areas lighting for benches and machines should be positioned to provide medium shadow conditions at the point of work, with care being taken to avoid stroboscopic effects.

4.60 The connections to external or plant room fittings should be made employing PVC cables in weatherproof type conduit, and the external luminaires, eg over entrances, external stairs etc, should be both weather and vandal-proof.

4.61 Each Controlled Drug cupboard should be provided with a parallel indicating lamp at the doorway to the room in which the cupboard is located as well as at the corresponding staff base. These lights should be interlocked with the cupboard to give visual indication when the cupboard is unlocked.

Corridors

4.62 Lighting should be at an average intensity of not less than 150 lux in corridors; this should be enhanced where traffic flow is frequent but should not exceed 300 lux measured at floor level. Luminaires should be orientated to minimize glare but should accentuate a corridor change of direction or junction.

Socket outlets

General

4.63 Sufficient 13 amp, universal, switched, shuttered socket outlets connected to ring or spur circuits should be provided to allow all portable appliances likely to be used simultaneously to be individually supplied. The 'B' sheets indicate specific locations for the outlets associated with individual activities but where activity areas abut, the installation of twin outlets is recommended, provided that neither the outlet position nor function is materially altered.

4.64 Domestic cleaning appliances having flexible leads nine metres long should be assumed, and socket outlets, usually in corridors, should be provided to enable such machines to operate over the whole range of the space concerned.

4.65 Fixed appliances rated up to 13 amps should be permanently connected to 13 amp fused spur boxes. Appliances rated in excess of this figure, or those requiring a three-phase supply should be permanently connected to separate final sub-circuits off fuse boards and independently switched.

4.66 Isolating switches or other means of isolation should be provided adjacent to electrical machinery and plant where necessary to ensure the safety of operatives and maintenance staff.

4.67 Electro-medical apparatus, heating appliances and automatically operated equipment should be provided with indicator lights to show when the electrical supply is switched on, or may be automatically switched on. Such indicators should be incorporated in the control panel of the apparatus, or in the control switch or socket outlet from which the apparatus derives its supply.

X-ray equipment

4.68 The heavy current surge taken during the operation of an X-ray apparatus requires special provision to be made to avoid excessive voltage drop and consequential unsatisfactory operation.

4.69 13 amp socket outlets and ring circuits are suitable as a means of supply for most mobile X-ray apparatus. A special 13 amp plug is commercially available which has been designed to accommodate the larger sizes of flexible cables used with this equipment. The impedance of the mains up to the socket outlets should be in accordance with HTM7, paragraphs 185-191 inclusive.[17]

Emergency electricity supplies

4.70 Guidance on provision of emergency electricity supplies is given in HTM 11.[22]

4.71 Portable battery operated lanterns (Group 3 equipment) should be provided for use by staff where the failure of lighting would preclude the continuation of a medical procedure.

4.72 All socket outlets in this department should be capable of being fed from the generator standby circuits and be so distributed that in each area where essential equipment may be used, eg high dependency and treatment rooms they are connected to at least two separate sub circuits.

Staff location system

4.73 Where the accommodation is associated with other hospital departments having a staff location system, extensions thereto will be required. Guidance on staff location systems is given in HTM 20.[23]

Patient/Nurse call system

4.74 The patient/nurse call system must be a simple system suitable for operation by elderly patients with feeble and sometimes deformed hands.

4.75 An extra low voltage call system without provision

for speech is necessary, and the patient's facility should be of the pear-push or pressure type. Call outlets should be located at each bed position, in day spaces, treatment rooms, patients' bathrooms and WCs. A flexible lead pear-push should be provided in all locations except at the bed-head, where it should be connected with a non-interchangeable socket type connection. For bathrooms and WCs the Activity Data sheets give the requirements.

4.76 An immediate visual or audible indication that a call has been made should be provided at the staff base and at other parts of the nursing sections and day hospital rooms where nursing staff may be present. It should give staff an unambiguous identification of the source of the call by the use of a 'follow the lights' system. The nursing section and day hospital systems should be separate except for staff base to staff base back-up emergency call.

4.77 At bed-head units and in the treatment room, an emergency button should be provided so that a nurse attending and unable to leave a patient can summon assistance, ie a nurse-nurse call facility. Differing cancellation arrangements should be provided for these emergency calls from those provided for the patient-nurse system.

Bed-head unit

4.78 A flush mounted bed-head unit should be provided at each bed position and should include a 13 amp socket outlet, a multi-purpose plug-in facility, a patient's call reassurance light, cancellation button, emergency nurse-nurse call button incorporating a cancellation feature, and a dimmer switch for the bed light with off, low, and full positions. Alternative plug-in assemblies may comprise either a pear-push or pressure control on a lead or a hand set assembly on a lead incorporating nurse call button reassurance light, bed-head light switch, four position radio selector switch, volume control and outlet for the stethophone.

4.79 Radio and other sound facilities providing a choice of up to four channels should be relayed to all bed-heads and a selected number of positions in sitting-out areas. These outlets should incorporate a programme selector, on/off switch and volume control. In locations where a television set may be in view of the outlet, one of the channels should be derived from the sound circuit of that television set, with the patient receiving the sound via head-phones and the television set loudspeaker rendered inoperative. In sitting-out areas where television sets are provided, an inductive loop method of powering the headphones should be employed. A proportion of the headsets should provide high volume sound so that partially deaf patients can hear.

4.80 Television aerial sockets fed by a communal aerial through an amplifier should be provided in all day rooms, and single or multi-bed rooms.

Telephones

4.81 Telephone facilities for internal and external calls in either separate or combined form will usually be available in the remainder of the hospital; extensions of this service will be required to this accommodation. Telephones will normally be of desk pattern and in bed and adjacent areas they should be fitted with an indicating call light, and a bell or buzzer of subdued tone which can be switched out of use.

4.82 Telephone socket outlets for use with a coin-operated telephone trolley should be provided in single and multi-bed rooms and where ambulant patients may use a telephone with reasonable privacy, including the parking location of this mobile unit.

Electric clocks

4.83 Clocks are required in both the nursing section and the day hospital to assist the patients to be aware of their surroundings. They should be provided in all multi-bed spaces, day spaces and at the staff bases, being of a nominal 305 mm diameter with particularly legible upright arabic numerals. Clock mechanisms should be consistent with those used in the remainder of the hospital, except that battery-powered clocks should be the quartz controlled type.

Fire alarms and detecting equipment

4.84 The fire alarm system should in general conform to HTM82[2] (in preparation) and BS 5839 Pt. 1[3] and should include both break-glass call points and automatic smoke detectors. The latter should be provided in all nursing sections, in all rooms where patients sleep and in certain other high risk areas as detailed in the guidance mentioned above. The choice of detectors is a complex matter but is dealt with in the guidance already mentioned. In general, audible signals alone will be adequate but it should be noted that the above guidance requires measurement and possible adjustment of sound levels after full occupancy of the building. Automatic door detentes will generally be required only in areas of heavy traffic but note should be taken of the special mobility problems of the elderly.

Cardiac arrest alarm

4.85 Where the remainder of the hospital has this facility it should be extended to this department.

Lightning protection

4.86 Protection against lightning should be provided in accordance with BS Code of Practice No. 326.[24]

Plant rooms and ducts

4.87 Electrical services in communication spaces such as plant rooms, service ducts and voids should include a good standard of lighting for access and maintenance of plant and adequate socket outlets for use of portable tools and lamps operating at 110 volts derived from a portable transformer. Plant rooms and access points to major ducts should be provided with a telephone, preferably wall-mounted connected to the hospital internal system only.

REFERENCES

1. **Department of Health and Social Security.** Fire safety in new health buildings (Health Technical Memorandum 81) London, HMSO. (In preparation)

2. **Department of Health and Social Security.** Fire alarm systems in Health Buildings (Health Technical Memorandum 82) London, HMSO. (In preparation)

3. **British Standards Institution.** BS 5839 Pt 1 1980 Fire detection and alarm systems in buildings. Code of Practice for installation and servicing BSI 1980 28 pp.

4. **Ministry of Health.** Noise control (Hospital Design Note 4) London, HMSO, 1966. 20 pp.

5. **Department of Health and Social Security.** Health services management – Hospital Design Note 4 (noise control) amendments to appendices II, IV and VIII. (HN(76)126) London, DHSS, 1976. i 2 pp.

6. **Building Regulations.** 1976. (SI 1976 No. 1676) London, HMSO, 1976 307 pp.

7. **British Standards Institution.** BS 2831. 1971. Methods of test for air filters used in air conditioning and general ventilation. 44 pp.

8. **Department of Health and Social Security.** Cold water supply: storage and mains distribution. (Health Technical Memorandum 27) London, HMSO, 1978, 74 pp.

9. **British Standards Institution.** BS 5306. Code of practice for fire extinguishing installations and equipment in premises. Pt 1: 1976. Hydrant systems, hose reels and foam inlets. 16pp.

10. **British Standards Institution.** BS 5423. 1977. Specification for portable fire extinguishers. 16 pp.

11. **Gas Council.** Plug-in connector, Gas Council Drawing 1985/A.

12. **British Standards Institution.** BS 570: 1959. Plug-and-socket gas connectors for portable appliances. 8 pp.

13. **British Standards Institution.** BS 669: 1960. Flexible tubing and connector ends for appliances burning town gas. 20 pp. Amendments PD 4183, June 1961, PD 5053, October 1963.

14. **Department of Health and Social Security.** Piped medical gases, medical compressed air and medical vacuum installations. (Health Technical Memorandum 22) London, HMSO, 1977. 92 pp.

15. **Department of Health and Social Security.** Permit to work system for piped medical gases, medical compressed air and medical vacuum installations. (Supplement to Health Technical Memorandum 22) London, HMSO, 1977. 16 pp.

16. **Institution of Electrical Engineers.** Regulations for the electrical equipment of buildings. 14th edition, 1966, reprinted. IEE, 1976. vii 224 pp.

17. **Department of Health and Social Security.** Electrical services supply and distribution. (Health Technical Memorandum 7) London, HMSO, 1977. 48 pp.

18. **Ministry of Health.** Abatement of electrical interference. (Hospital Technical Memorandum 14) London HMSO, 1965. 26 pp.

19. **Department of Health and Social Security.** Electrical lighting: specification for good colour rendering fluorescent light source suitable for hospital lighting. (Hospital Service Engineering Data Sheet DE 2.1) London, DHSS, 1976. 3 pp.

20. **Department of Health and Social Security.** Good colour rendering fluorescent lighting in health buildings (HN(76)39) London, DHSS. 1976. 2 pp.

21. **Chartered Institution of Building Services.** Lighting guide: hospitals and health care buildings. Publication No 12, CIBS. 1979. 80 pp.

22. **Department of Health and Social Security.** Emergency electrical services. (Hospital Technical Memorandum 11) London, HMSO, 1964. 37 pp.

23. **Department of Health and Social Security.** Staff location systems. (Hospital Technical Memorandum 20) London, HMSO, 1968. 10 pp.

24. **British Standards Institution.** CP 326: 1965. The protection of structures against lightning. 64 pp.

5 Activity data

General

5.1 The expression 'Activity Data' refers to an information system developed to help project and design teams by defining the users' needs more precisely. This information constitutes the Activity Data Base, issued to Health Authorities in 1976, and comprises two types of information sheet: Activity Space Data sheets (known as 'A' sheets) and their supporting Activity Unit Data sheets (known as 'B' sheets).

5.2 'A' sheets record in more detail than elsewhere in this Note each task or activity that is performed in a particular activity space (which may be a room, space or bay) together with details of the environmental conditions and the technical data necessary to enable the activities to be performed. Each 'A' sheet also contains a list of the titles and code numbers of the relevant 'B' sheets which give, both in narrative text and in graphics to scale, equipment fitted or supplied as part of the building and engineering terminals which satisfy the required user activities.

5.3 Further information about the use and preparation of Activity Data can be found in the 'Guide to 'A' and 'B' Activity Data Sheets and their use in Health Building Schemes' issued to NHS Authorities in 1980.

Activity data applicable to this Note

5.4 The 'A' sheets recommended for the activity spaces described in this Note have been newly prepared or selected from existing sheets. Their code numbers are listed against the appropriate activity spaces at the end of this Chapter (a symbol C denotes a common activity space).

5.5 Further 'A' sheets may be selected or drawn up by project teams to their own requirements for any services not described in the Note or included in the list. However, in order to ensure consistent and economic provision, variations from the 'A' sheets recommended for the spaces covered in this Note should be considered only where it has been decided that the function of a space will differ from that described.

Nursing section – 24 beds

Activity space		TYPE A 'A' Sheet Code No	TYPE B 'A' Sheet Code No	Para Number in Building Note
Single bedroom		B0107	B0108	3.44–3.49
Single bedroom (WC en suite)		B0105	B0106	3,48
Multi-bed spaces – 3 beds		B0207	B0208	3.50–3.59
– 5 beds		B0211	B0212	
– 6 beds		B0213	B0214	
Day space (sitting and dining)		D0805	D0806	3.60–3.67
(quiet room)		D1105	D1105	3.62
Physiotherapy space		X0415	X0415	3.70
Occupational therapy (ADL)		Q0112	Q0112	3.71
Staff base	C	T0101	T0101	3.72–3.74
Sanitary facilities				
Assisted WC and personal wash		V1205	V1205	3.86 (a)
Assisted WC and hand-rinse		V1214	V1214	3.86 (b)
Bathrooms and showers				
Assisted bathroom/treatment and WC	C	V1714	V1714	3.88–3.92
Assisted bathroom and WC	C	V1708	V1708	3.93–3.97
Assisted shower and WC	C	V1612	V1612	3.98–3.102
Equipment/supply		W1412	W1415	3.104
Linen and clothing store		W1414	W1413	3.105–3.108
Wheelchair and equipment bay		G0107	G0107	3.109
Clean utility	C	T0601	T0601	3.110
Dirty utility	C	Y0301	Y0301	3.111–3.114
Pantry	C	P0603	P0603	3.115
Nursing section office	C	M0201	M0201	3.117
*Doctor's office	C	M0305	M0305	3.118
Flower bay		Y1402	Y1402	3.119
Cleaning space	C	Y1501	Y1501	3.120
Disposal	C	Y0603	Y0603	3.121
*Staff cloakroom		V0506	V0506	3.122–3.124
*Locker room		V0604	V0604	3.123
Staff WC	C	V1005	V1005	3.122
*Seminar room	C	H0503	H0503	3.125–3.126
Switchroom		K0101	K0101	3.127
*Nursing officer's office		M0202	M0202	3.128
Additional accommodation				
Relatives' rooms	C	D1302	D1302	3.129–3.130
Hairdressing		V2002	V2002	3.131

* Essential complementary accommodation (see Chapter 6)

Day hospital (40 places or 25 places)

Activity space	40 Places 'A' sheet Code No	25 Places 'A' Sheet Code No	Para number in Building Note
Reception and administration	J0410	J0410	3.164
Clothes hanging, waiting space, wheelchair park	J1115	J1114	3.165
Sub-waiting	J1206	J1206	3.166
Quiet space	D1106	–	3.171
General sitting space	D1107	D1108	3.172
Dining space	D0601	D0602	3.174
Pantry	P0604	P0604	3.177
Occupational therapy	Q0502	Q0501	3.179
Occupational therapy workshop	Q0210	Q0210	3.181
Activities of daily living			
Bathroom	Q0109	Q0109	3.184–3.187
Bedroom	Q0102	Q0102	
Kitchen	Q0110	Q0110	
Utility/Laundry	Q0111	Q0111	

Day hospital (40 places or 25 places) (cont.)

Physiotherapy		X0416	X0417	3.188
Remedial therapists' office		M0512	M0512	3.190
Remedial therapists' store		W1213	W1214	3.191
Consulting room and speech therapy		C0104	C0104	3.192–3.194
Consulting/examination room	C	C0201	–	
Examination room	C	C0603	C0603	
Examination/recovery		C0506	C0506	
Treatment		X0211	X0211	3.195
Treatment		X0106	X0106	3.196
Sanitary facilities				
WCs (wheelchair & handrinse)		V1214	V1214	3.197
Assisted bathroom & WC	C	V1708	V1708	
Assisted shower & WC	C	V1612	V1612	
Hairdressing		V2002	V2002	3.198
Clean utility		T0603	T0603	3.199
Dirty utility (with laundry)		Y0404	Y0404	3.200–3.201
Dirty utility (without laundry)		Y0406	Y0406	
Storage (linen & clothing)		W1106	W1106	3.202
Storage (general)		W1107	W1107	3.203
Seminar/staff room (12 people)		H0506	H0506	3.204
Unit office	C	M0201	M0201	3.205
Office/interview		M0702	M0702	
Staff cloakroom		V0504	V0505	3.206–3.208
Locker room		V0606	V0607	
Staff WC and wash hand-basin	C	V1005	V1005	
Disposal room	C	Y0603	Y0603	3.209
Cleaning space	C	Y1501	Y1501	3.210
Switchroom		K0101	K0101	3.211

Administrative centre

Activity Space		'A' Sheet Code No	Para number in Building Note
Administrative offices	C	M0201 (or M0101)	3.228
Consultants' offices	C	M0306	3.229
Senior registrar	C	M0305	3.230
Office(s) for support staff	C	M0101	3.231
Social worker's office	C	M0101	3.232
Social worker/interview	C	M0702	3.232
Staff WC & hand-rinse	C	V1005	3.233–3.234

6 Cost information

General

6.1 For all types of health buildings it is clearly of vital importance that building costs and revenue expenditure should be kept as low as possible consistent with acceptable standards. Within this general context, Health Building Notes set out the levels of accommodation for health buildings which the Department of Health and Social Security, in conjunction with the National Health Service, recommends for the provision of a given service. In applying the guidance in this Note to determine the detailed design of a project, the need for economy should be carefully considered so that, where appropriate, space can be shared for similar activities or programmed for activities which take place at different times. (3.4)

6.2 To prepare the cost allowance for a scheme, reference should be made to the current edition of Appendix 7 to Hospital Building Procedure Note 6 – Capricode. The total cost allowance appropriate for any scheme is derived by aggregating the cost of the functional units included in the particular scheme. This cost allowance will include the basic accommodation and any additional accommodation or engineering that may be appropriate.

6.3 The cost allowance covers the building guidance set out in Chapter 3 and the engineering guidance in Chapter 4. The costing of the functional units assumes that they will be incorporated into a whole hospital to form a complete department. By allowing the cost allowance to be related more exactly to the options available, it is expected that design teams will be encouraged to plan from the outset for the most economical option available in the circumstances of their particular project. On the other hand, the cost allowance will not penalise those projects where, for example, circumstances do not permit sharing.

6.4 The functional units in this Note are:

a. Nursing Section
   (i) Type A 24 Beds } See 3.31
   (ii) Type B 24 Beds }

b. Essential Complementary Accommodation (ECA). This comprises activity spaces which are essential to the running of the nursing section but which in certain circumstances may be available in a convenient location elsewhere, either in a new development or an existing building. The amount of ECA which will need to be provided as part of an individual project will therefore vary according to the extent of the provision available elsewhere. The ECA comprises the following spaces:
   i Seminar room
   ii Doctor's office
   iii Nursing officer's office
   iv Staff changing – Centralised (3.122)
   v Staff changing – Decentralised (3.123)

c. Day Hospital – 25 and 40 places

d. Administrative Centre – 200,000 population district.

Schedules of activity spaces for each functional unit are provided at the end of this chapter.

6.5 It will be appreciated that, in determining spatial requirements, the essential factor is not the total area provided but the critical dimensions, ie those dimensions critical to the efficient functioning of the activities which are to be carried out. There are therefore no recommended areas associated with the schedule of activity spaces. To assist design teams in preparing detailed design solutions for the rooms and spaces, the Department of Health and Social Security has carried out studies to establish dimensional requirements in the form of critical dimensions. The results of these studies are published as ergonomic diagrams in this Note and in the Draft Building Note: Common Activity Spaces which has been made available to Regional Health Authorities as a working document. Activity zones may be overlapped if the design policy allows and the function will not be impaired.

6.6 It is recognised that, for development planning and at the earliest stage of a departmental design, it may be convenient for designers to have data available which enables them to make an approximate assessment of the sizes involved. For this reason the schedules of areas, prepared for the purpose of establishing the cost allowance, are included with the notice promulgating the Departmental Cost Allowance, for this Note. It is emphasised that the areas published do not represent recommended room sizes nor specific individual entitlements.

Nursing sections

6.7 The cost allowance has been established on the basis of a single section of 24 beds. Separate functional unit costs are provided for both Type A and B nursing sections. The costs allow for (a) two single bedrooms to be sound-contained for noisy patients (3.46), (b) one single room with WC en suite for isolation purposes (3.48), and (c) WC provision to the requirements of paragraph 3.85.

ECA

6.8 In developments where one or more of the activity spaces comprising ECA are not available in the terms described in paragraph 6.4b above, they will be required

to be provided and the cost added to the cost of the nursing section or sections.

6.9 Included in the costing for the rooms in ECA are the necessary circulation and planning provision areas.

Shared accommodation

6.10 When two or more nursing sections are provided in close proximity to each other some sharing of rooms and facilities between sections should also be possible. Depending on the type of development, some or all of the rooms listed under 3.132 and 3.133 may be shared, together with the switchroom. The extent to which sharing is possible must be a policy decision. To enable assessment of the level of savings that might be made, the individual cost of each room is indicated in the appendix to the cost notice.

Additional accommodation

6.11 The relatives room and the hairdressing room have been allowed as additional accommodation to both types of nursing section.

Day hospital

6.12 Costings have been prepared for two sizes of day hospital, namely 25 and 40 places. The schedule of activity spaces for each size of day hospital has similar provision, the 40 place being larger in area and provided additionally with a quiet room and a consulting/examination room. The costing includes the staff changing provision in the day hospital.

6.13 As a laundry room is included with the activities for daily living, no allowance has been included for laundry facilities in the dirty utility room.

Administrative centre

6.14 The administrative centre is expected to meet the work load for a District of 200,000 population. (3.220) The cost allows for the necessary accommodation for three consultants, a senior registrar, two social workers and the clerical support staff, as well as circulation space and planning provision.

Engineering

Engineering zone

6.15 The costs allow for the provision of the necessary space for a heating and ventilation zone adjacent to external walls and for small vertical ducts. This space is included in the schedule of areas for costing purposes as part of the circulation provision.

Engineering Services

6.16 The following engineering services are included in the quoted costs of basic and additional accommodation shown in the Departmental Cost Guide. All engineering services are assumed as being conveniently available at the boundary of the department and, apart from electrical distribution facilities, medical gas isolation points and the like, plant rooms are not included.

a. Mechanical Services

Heating: low pressure hot water system maximum touch temperature 50°C, with zoned controls for aspect

Ventilation: tempered supply, and extract

Cold Water Service: centrally supplied, tanks not included

Hot Water Service: centrally stored at 60°C, and distributed at 52°C±2°C with temperature reduction facilities for patient baths and showers (43°C max).

Fire Fighting Water: centrally supplied, hosereels and loose extinguishers not included

Natural Gas: centrally supplied

Medical Gas: centrally supplied

b. Electrical Services

Wiring to all lighting points, including fittings and socket outlets and permanently connected equipment; Departmental electrical distribution equipment for the above and ancillary services eg telephones, staff location fire alarms and patients' services.

c. Equipment

Water boiler, bed pan disposal unit, shower mixing valves, X-ray viewers.

SCHEDULE OF ACTIVITY SPACES

Nursing sections – 24 bed single section

	Activity space	Section A Acute	Section B Rehabilitation continuous care
	Basic accommodation	No	No
1	Single bedroom	3	3
2	Single bedroom (WC en suite)	1	1
3[a]	Multi-bed space – 3 beds	1	1
3[b]	Multi-bed space – 5 beds	1	1
3[c]	Multi-bed space – 6 beds	2	2
4	Day space (sitting and dining)	1	1
5	Day space (quiet room)	1	1
6	Physiotherapy space	1	1
7	Occupational therapy	1	1
8	Staff base	1	1
	Sanitary Facilities for Patients		
9	Assisted WC and personal wash	3	3
10	Assisted WC and hand rinse	2	2
11	Assisted bathroom/treatment and WC	1	1
12	Assisted bathroom and WC	1	1
13	Assisted shower and WC	1	1
14	Equipment/supply	1	1
15	Linen and clothing store	1	1
16	Wheelchair and equipment bay	1	1
17	Clean utility	1	1
18	Dirty utility	1	1
19	Pantry	1	1
20	Nursing section office	1	1
21	Flower bay	1	1
22	Cleaners	1	1
23	Disposal	1	1
24	Staff WC	1	1
25	Switchroom	1	1

Additional accommodation

Relations' room	Proportion of room only
Hairdressing	Ditto

Essential complementary accommodation to nursing sections

Activity space	No
Basic accommodation	1
1 Seminar room	
2 Doctors' office	1
3 Nursing officer's office	1
4 Staff changing (decentralised)	1
OR	
5 Locker room (centralised staff changing)	1

Day hospitals

Activity space	25 place	40 place
Basic accommodation	No	No
1 Entrance	1	1
2 Reception/Admin/Records	1	1
3 Clothes hanging/waiting/wheel-chair park	1	1
4 Sub-waiting	1	1
5 Quiet space	0	1
6 General sitting space	1	1
7 Dining space	1	1
8 Pantry	1	1
9 Occupational therapy	1	1
10 OT Workshop	1	1
Activities of Daily Living		
11 Bathroom	1	1
12 Bedroom	1	1
13 Kitchen	1	1
14 Utility/Laundry	1	1
15 Physiotherapy	1	1
16 Remedial therapists' office	1	1
17 Remedial therapists' store	1	1
18 Consulting room and speech therapy	1	1
19 Consulting/Examination	0	1
20 Examination room	1	1
21 Examination/Recovery	1	1
22 Treatment 1 (with WC)	1	1
23 Treatment 2	1	1
Sanitary facilities – patients		
24 WCs (Wheelchair and handrinse)	4	6
25 Assisted bathroom and WC	1	1
26 Assisted shower and WC	1	1
27 Hairdressing	1	1
28 Clean utility	1	1
29 Dirty utility (with laundry)	–	–
OR		
30 Dirty utility (without laundry)	1	1
31 Storage (linen and clothing)	1	1
32 Storage (general)	1	1
33 Seminar/Staff room (12 people)	1	1
34 Unit office	1	1
35 Office/Interview	1	1
36 Staff cloakroom (decentralised)	1	1
OR		
Locker room (centralised staff changing)	–	–
37 Staff WC and wash-hand basin	1	1
38 Disposal room	1	1
39 Cleaning space	1	1
40 Switchroom	1	1

Administrative centre

(To serve a population of about 200,000)

Activity space	No
Basic accommodation	
1 Administrative office	1
2 Consultants' offices	3
3 Senior registrar	1
4 Offices for support staff	2
5 Social workers' office	1
6 Social worker/Interview	1
7 Staff WC and handrinse (F)	1

Appendix I

Demographic factors relevant to the planning of geriatric services

1. The proper basis on which to plan a geriatric service is a detailed study of the structure of the local population. However, this population will always be a changing one, and the general principles governing the dynamics of population change can be helpful in forecasting the future of a local community.

2. OPCS Population Projections 1973–2103 make it possible to review the structure of the elderly population (defined as aged 65 and over) into the early part of the 21st century. As the projections are based on people alive now the figures for absolute numbers have a high degree of reliability. This is because death rates are known accurately and they change only slowly. Furthermore, inward and outward migration in the late middle-age group is fairly small (this is true nationally, but not locally: see paragraph 2.4 under 'General considerations'). On the other hand, long-term projections of the percentage of the elderly in the whole population are rather less reliable, as they are affected by fluctuations in the birth rate and possible changes in the emigration rate in younger adult groups. Nevertheless, the percentages shown in Table I are likely to be very close to the truth. Particular notice should be taken of the time scale of the changes shown. The total number of elderly reaches a peak in the latter part of the decade 1981–91. The peak of the very old (75 and over) is reached about 12 years later.

3. Internal structure of the elderly population is given in Table II. This shows that by the end of this century over one third of the elderly men and nearly one half of the elderly women will be in the over-75 group.

TABLE 1

Total population, England and Wales (000s)

	1976	1986	1996	2006	2016
1 Total population	49247	49195	50376	50534	51148
2 Population 65+	7056	7480	7477	7412	7870
3 Population 65–74	4510	4365	4239	3894	4736
4 Population 75+	2546	3115	3238	3248	3134
(2) as % of (1)	14.3	15.2	14.8	14.1	15.4
(4) as % of (1)	5.2	6.3	6.4	6.4	6.1

TABLE 2

Percentage of elderly in age groups

		1976	1986	1996	2006	2016
Male	65–74	70.9	64.9	63.5	61.4	66.1
	75+	29.1	35.1	36.5	38.6	33.9
Female	65–74	59.4	54.1	52.2	49.8	56.0
	75+	40.6	45.9	47.8	50.2	44.0
Total	65–74	63.9	58.4	56.7	52.5	60.2
	75+	36.1	41.6	42.3	47.5	39.8

Appendix II

Critical dimensions

The illustrations in this appendix contain information on critical dimensions for activities which are not contained in the Common Activity Spaces document, to which reference should also be made.

List of illustrations

1. Using an armchair with assistance.
2. Using an upright chair with assistance.
3. Walking with a walking frame (independent or assisted).
4. Using an ironing board (standing or seated users).
5. Using an ironing board (wheelchair users).
6. Laundry work using a sink (frontal approach).
7. Laundry work using a sink (lateral approach).
8. Using an exercise staircase.
9. Exercising on an exercise table.
10. Using parallel bars with assistance.
11. Exercising on wall bars with assistance.
12. Use of WC by assisted wheelchair users.
13. Tending plants by standing patients.
14. Tending plants by wheelchair patients (side approach).
15. Tending plants by wheelchair patients (frontal approach).

ACTIVITIES

Sitting on chair
Assisting patient to sit down on, or rise from chair

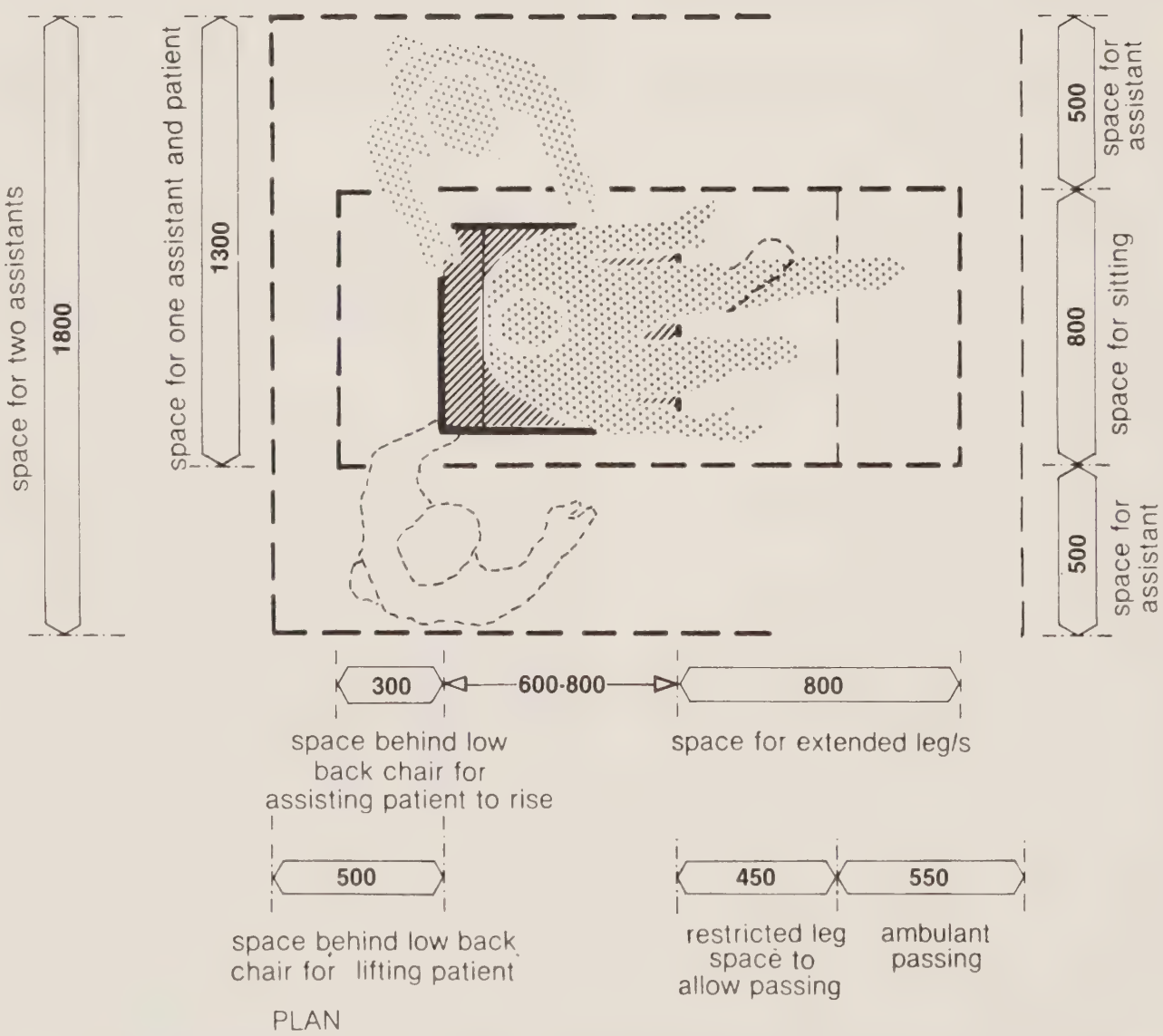
Chair

An armchair (with high or low back)

USERS
Elderly with assistance

Ergonomic data bank: Component-user data sheet DHSS not to scale

ELEVATION



PLAN

1350 *(1300)*

Preferred minimum

Restricted minimum (not recommended for general use: see explanatory notes)

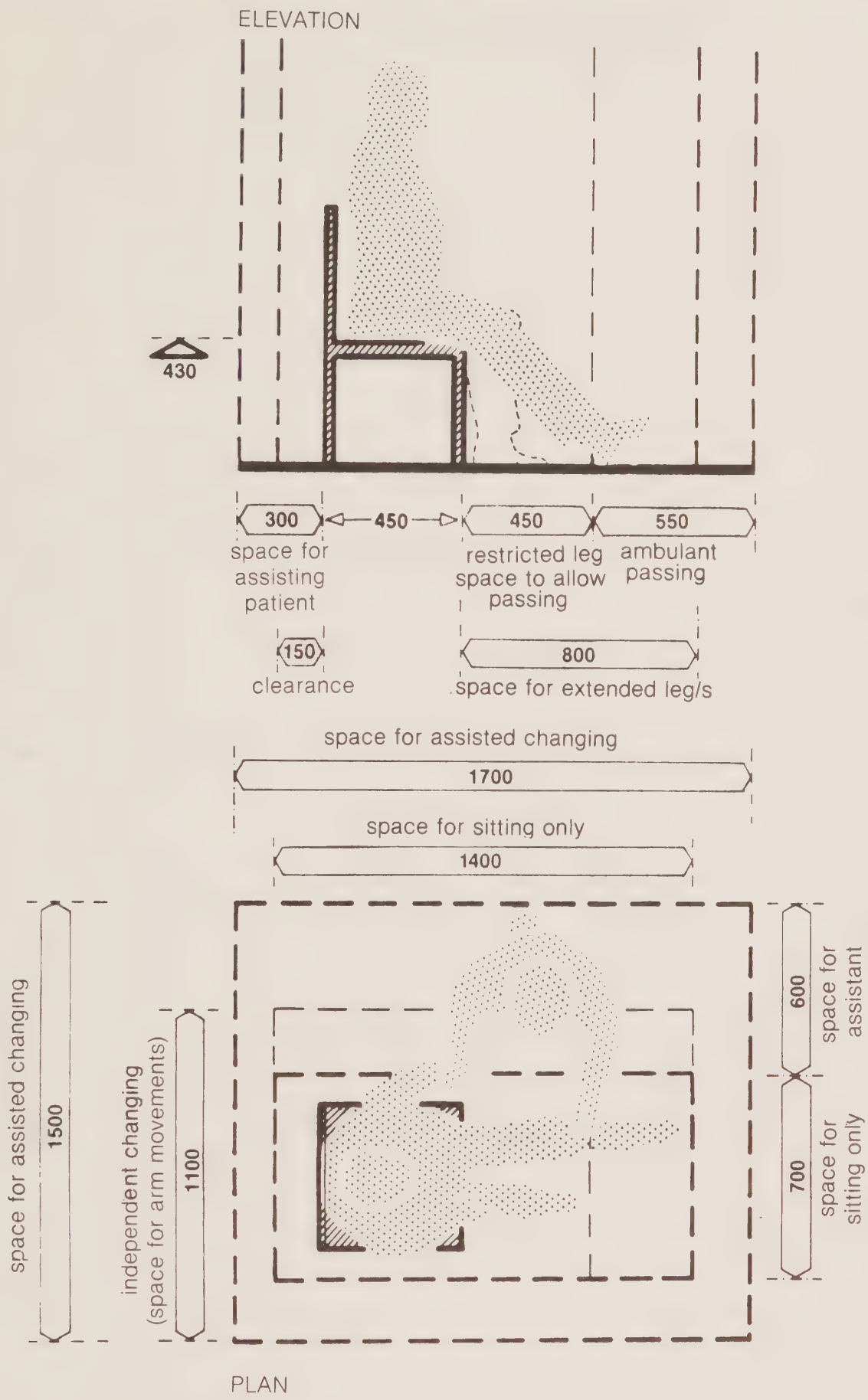
ACTIVITIES
Sitting in chair
Assisted and independent changing

Chair

Upright

USERS
Partially capable (including the elderly) with assistance

Ergonomic data bank: Component-user data sheet DHSS not to scale



1350	*(1300)*
Preferred minimum	*Restricted minimum (not recommended for general use: see explanatory notes)*

ACTIVITIES

Walking and passing through doors

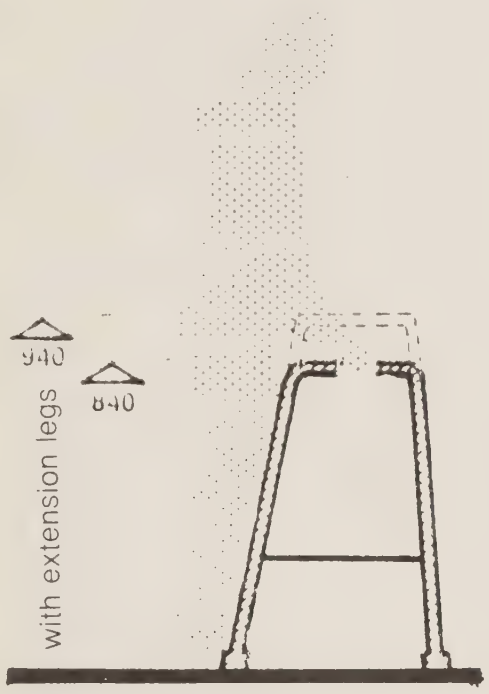
Frame, walking

Lightweight
see Note 1

USERS
Partially capable (including the elderly) independent or assisted

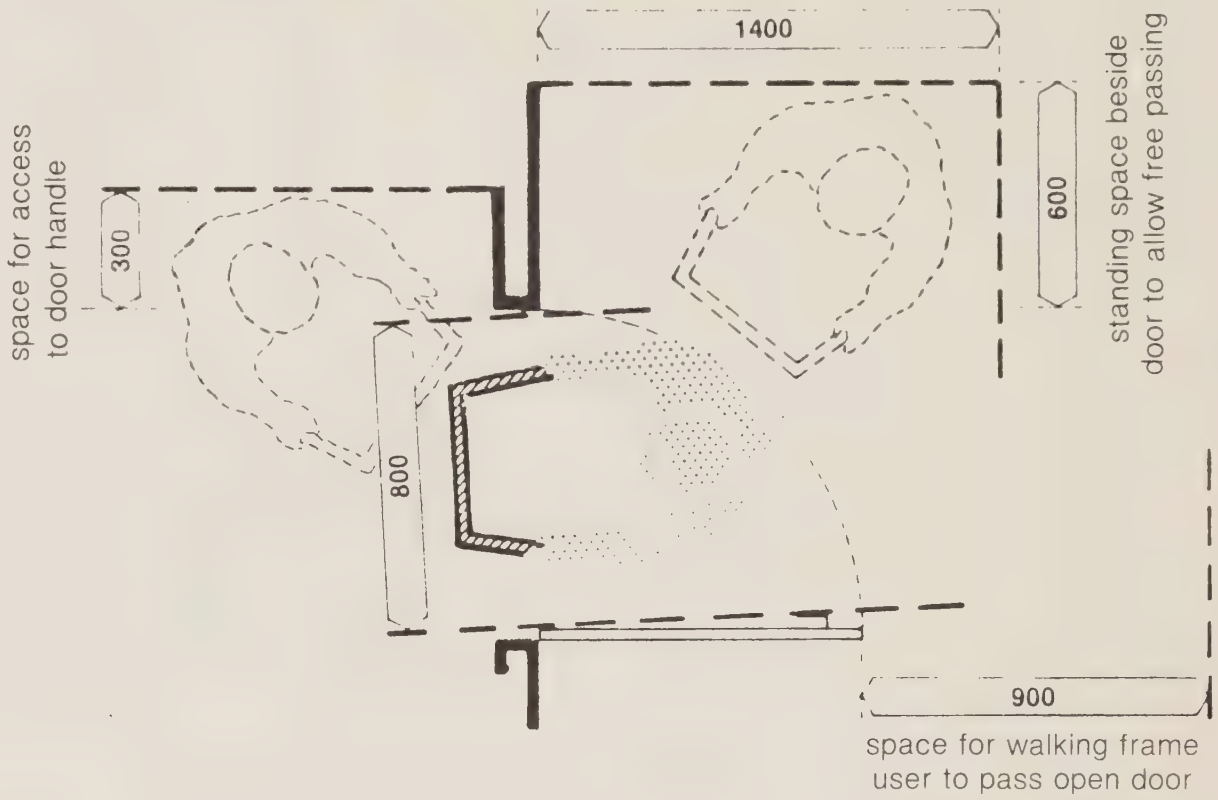
Ergonomic data bank: Component-user data sheet DHSS not to scale

NORMAL CIRCULATION



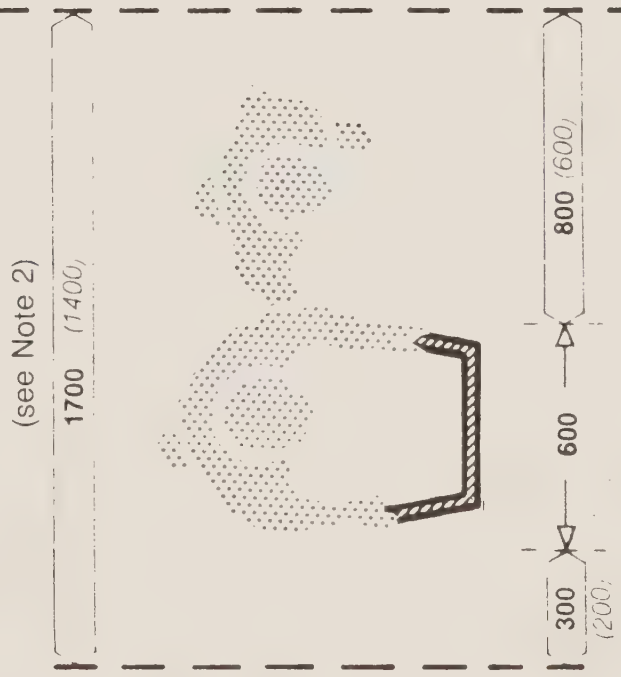
ELEVATION

SPACE FOR INDEPENDENT USER TO PASS THROUGH SINGLE LEAF DOOR

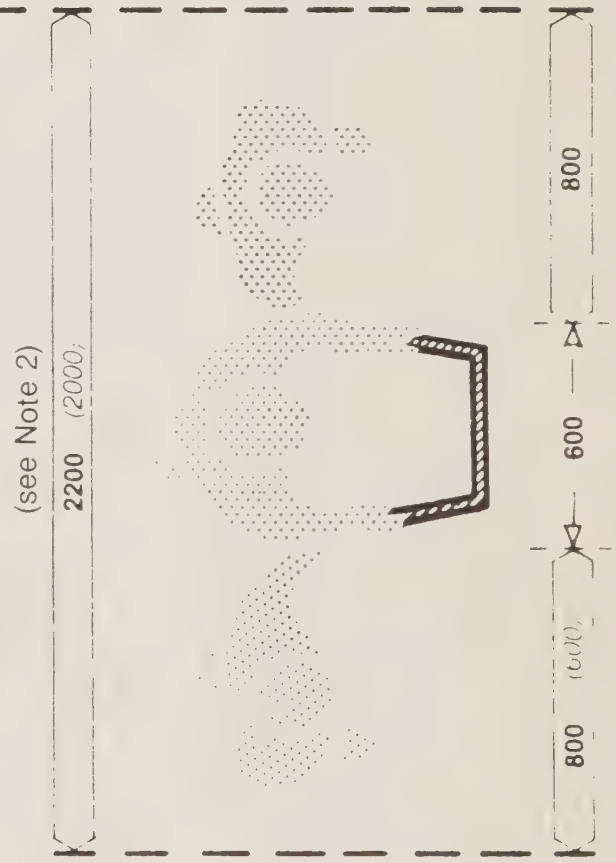


INDEPENDENT WALKING

WALKING WITH ONE ASSISTANT



WALKING WITH TWO ASSISTANTS



PLAN

1350	(1300)
Preferred minimum	*Restricted minimum (not recommended for general use: see explanatory notes)*

Notes

1 Certain types of folding and/or wheeled frames can be dangerous. Frames must be rigid and stable in use to provide satisfactory support. Selection should therefore be undertaken carefully. Space requirements for these other types are similar to those shown.

2 Restricted (bracketed) dimensions are applicable for infrequent movement where the travel distance does not exceed 1500.

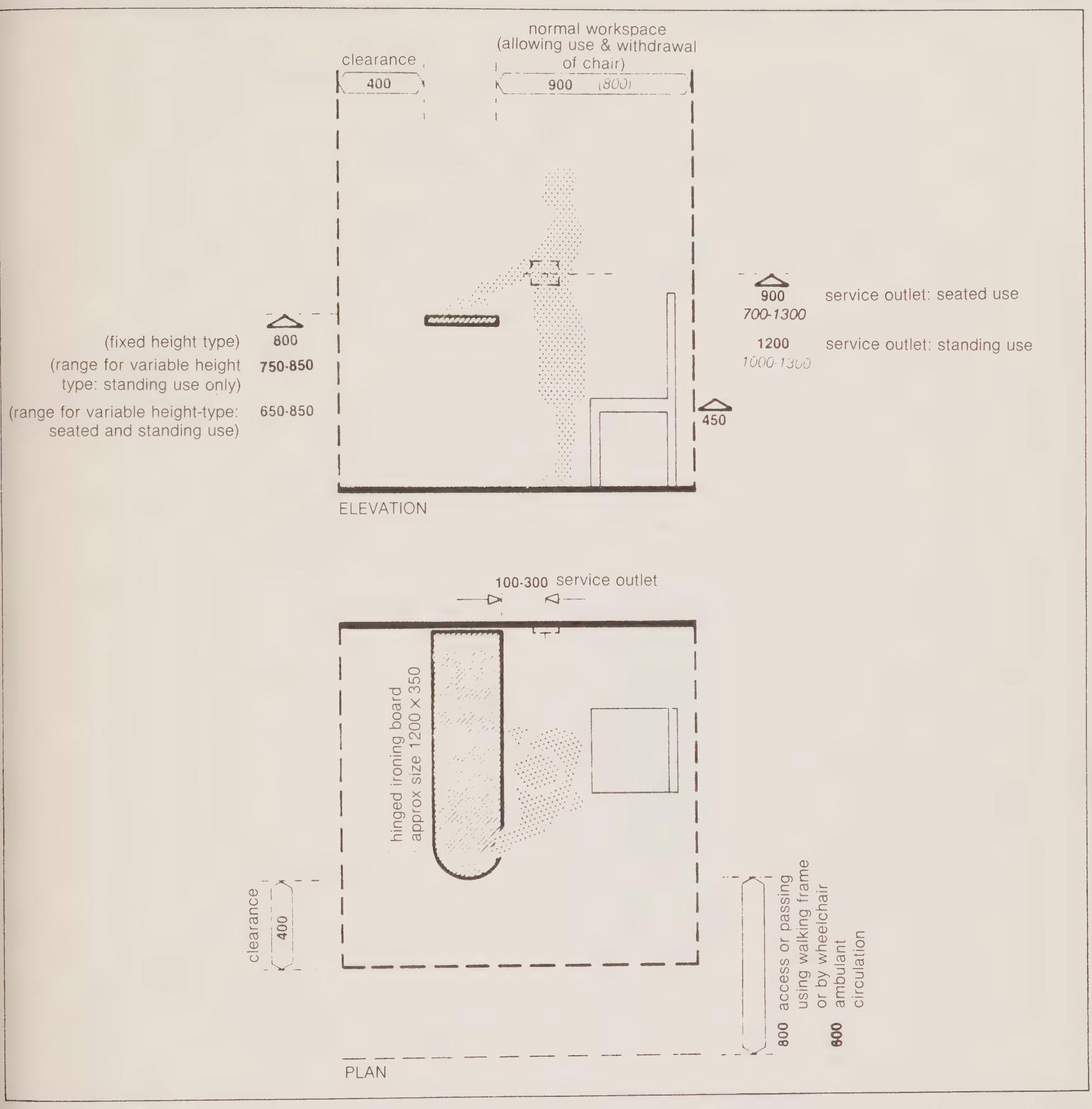
ACTIVITIES
Rehabilitation — ironing clothes

Ironing board

Hinged, drop-down fixed height or variable height

USERS
Partially capable (including the elderly): standing or seated users

Ergonomic data bank: Component-user data sheet DHSS not to scale



1350 *(1300)*

Preferred minimum

Restricted minimum (not recommended for general use: see explanatory notes)

Notes

1 Portable ironing boards tend to be unsteady and difficult to erect. Secure hinged, drop down boards with a variable height facility are preferred for the partially capable.

ACTIVITIES

Rehabilitation — ironing clothes

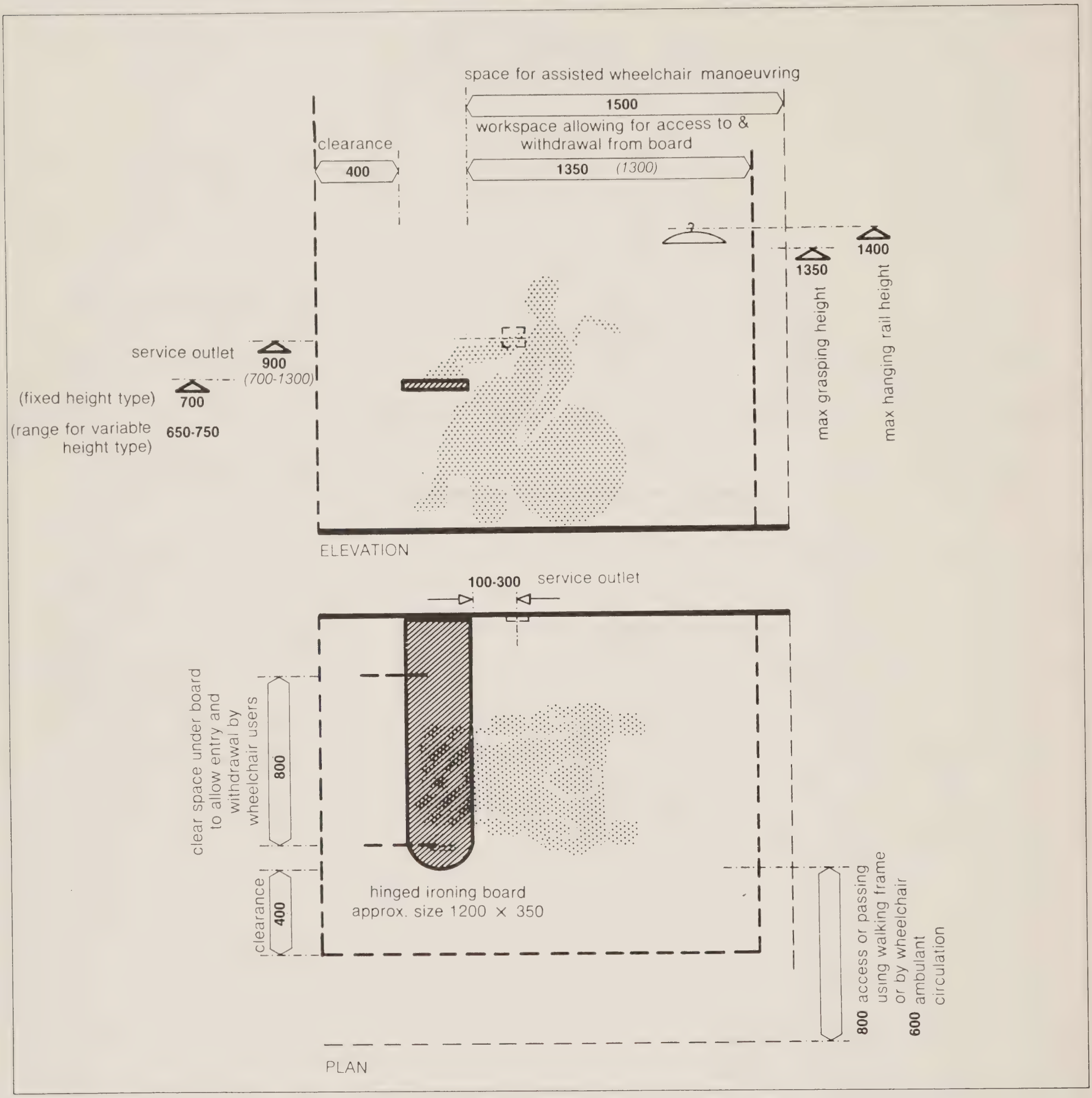
Ironing board

Hinged, drop-down, fixed height or variable height

USERS

Assisted and independent wheelchair users

Ergonomic data bank: Component-user data sheet DHSS not to scale



1350 (1300)

Preferred minimum

Restricted minimum (not recommended for general use: see explanatory notes)

Notes

1 Portable ironing boards tend to be unsteady and difficult to erect. Secure hinged, drop down boards with a variable height facility are preferred for the partially capable and wheelchair users

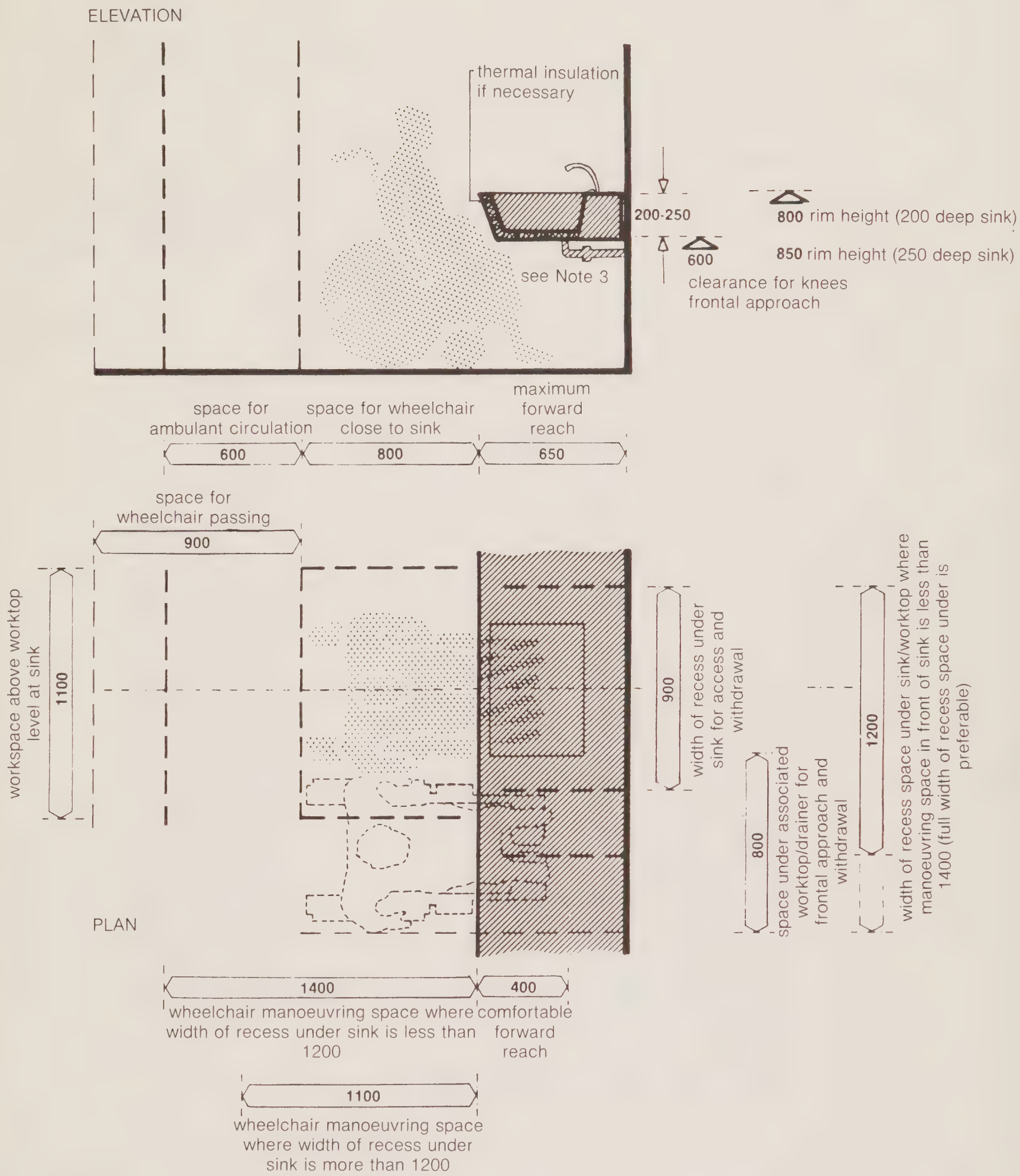
ACTIVITIES
Rehabilitation — laundry work using frontal approach
see also **Sink**, laundry work using lateral approach

Sink

Laundry
(200-250 deep)

USERS
Wheelchair disabled

Ergonomic data bank: Component-user data sheet DHSS not to scale



1350	(1300)
Preferred minimum	*Restricted minimum (not recommended for general use: see explanatory notes)*

Notes

1 Laundry work requires a deeper sink than is normally required for general kitchen activities — i.e. 200-250 mm deep as opposed to 140-150 mm. Consequently its use from the wheelchair presents problems which make designing a satisfactory workstation very difficult. In trying to provide adequate knee access space below the sink, the rim height becomes excessively high, and vice versa.

2 For some users it may not be practicable to attempt providing for frontal approach; although it provides a less satisfactory working posture, planning in this case should cater for a lateral approach only. See also **Sink**, *laundry work using lateral approach.*

3 Waste outlet and trap should be positioned as near back wall as possible to minimize obstruction to knees under sink. Waste and hot water pipes should be insulated to avoid injury to legs.

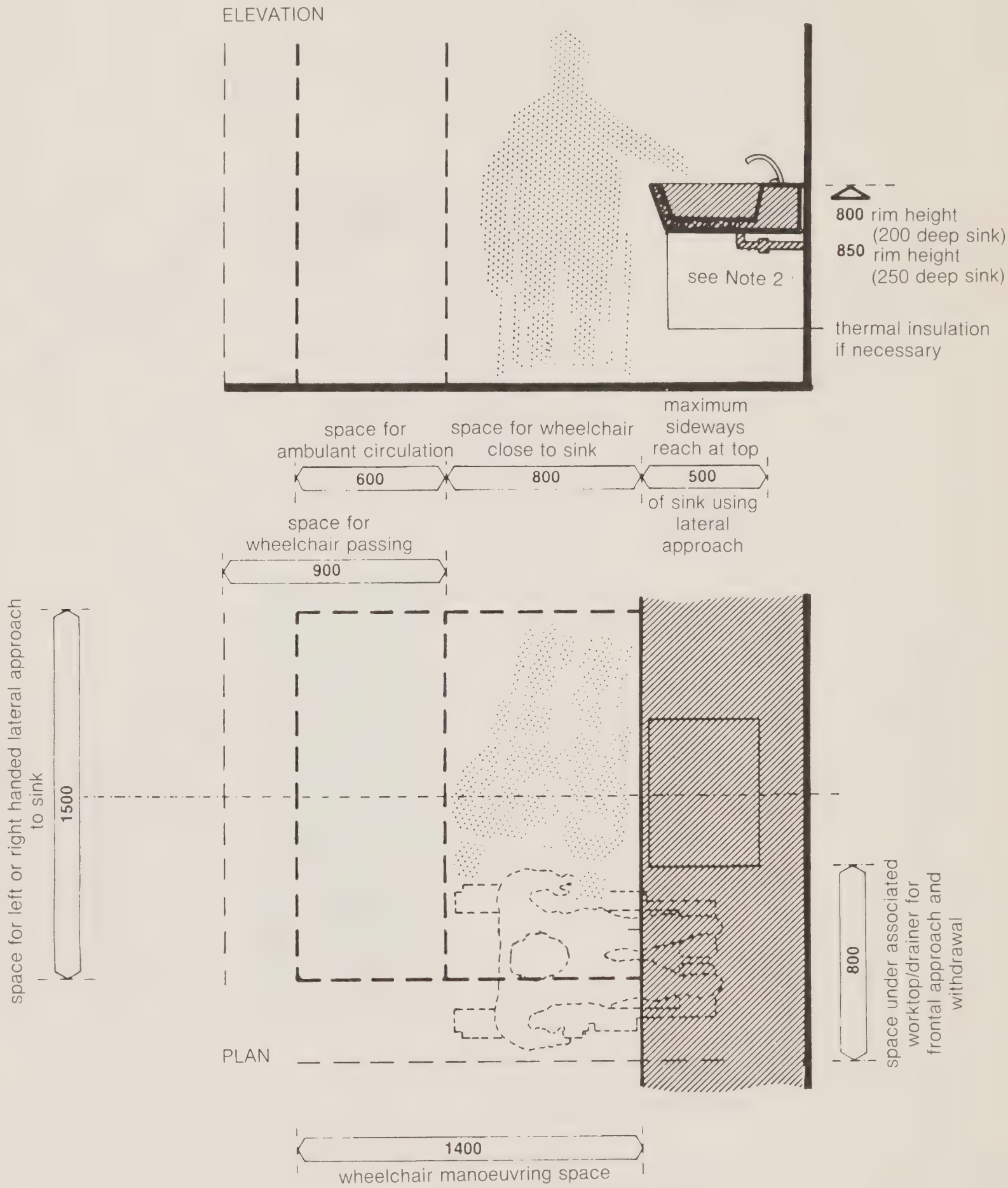
ACTIVITIES
Rehabilitation — laundry work using lateral approach
see also **Sink**, laundry work using frontal approach

Sink

Laundry
(200-250 deep)

USERS
Wheelchair disabled

Ergonomic data bank: Component-user data sheet DHSS not to scale



1350 (1300)

Preferred minimum

Restricted minimum (not recommended for general use: see explanatory notes)

Notes

1 Laundry work requires a deeper sink than is normally required for general kitchen activities — i.e. 200-250 mm deep as opposed to 140-150 mm. Consequently its use from the wheelchair presents problems which make designing a satisfactory workstation very difficult. In trying to provide adequate knee access space below the sink, the rim height becomes excessively high, and vice versa.

2 Waste outlet and trap should be positioned as near back wall as possible to minimize obstruction to knees under sink. Waste and hot water pipes should be insulated to avoid injury to legs.

ACTIVITIES

Retraining in the use of domestic staircases

This design aims to simulate 2 different stair types — the patients use the type most like that in their home

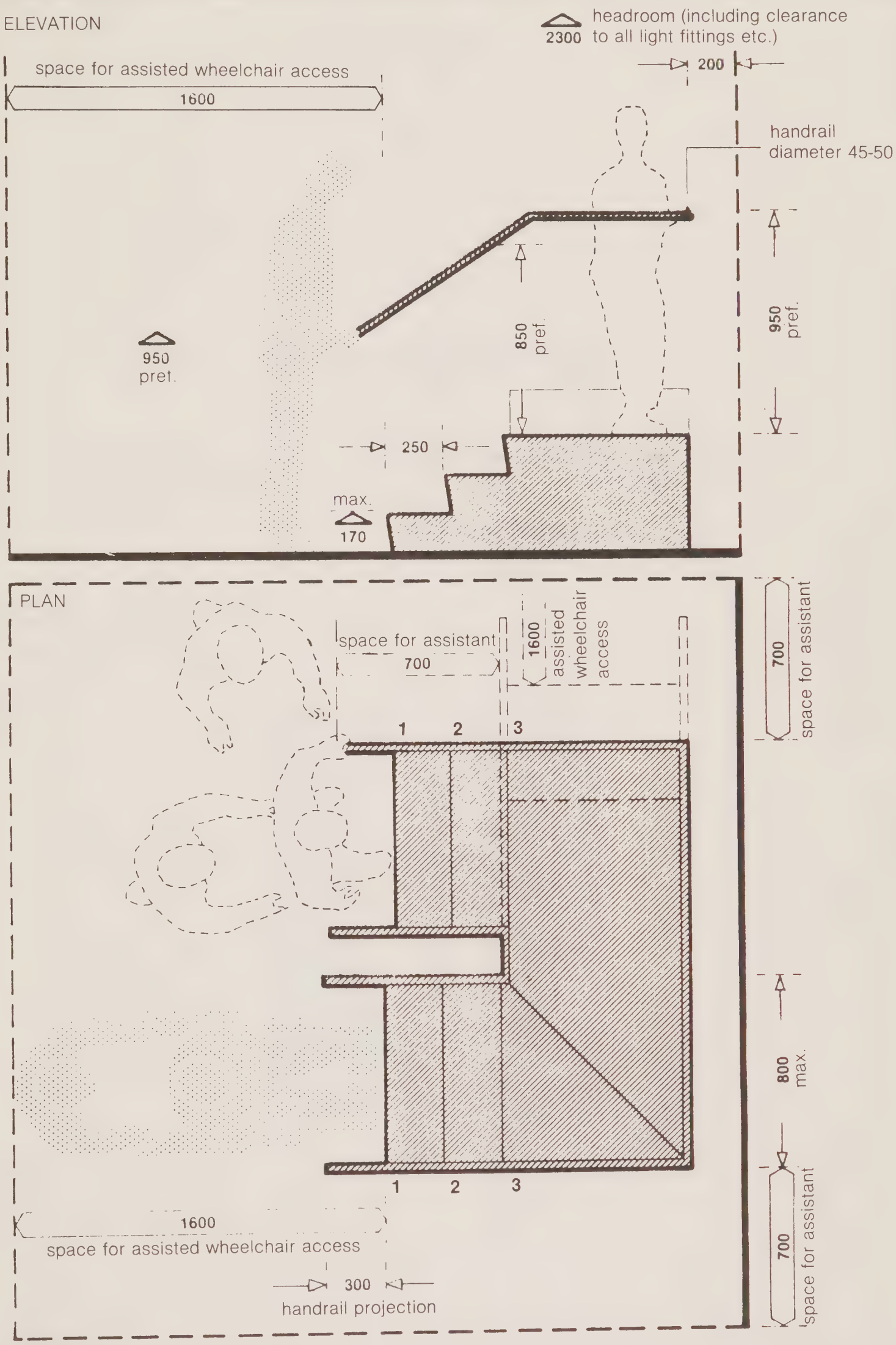
Exercise staircase

7 tread

USERS

Partially capable (including the elderly) with assistance

Ergonomic data bank: Component-user data sheet DHSS not to scale



1350 (1300)

Preferred minimum

Restricted minimum (not recommended for general use: see explanatory notes)

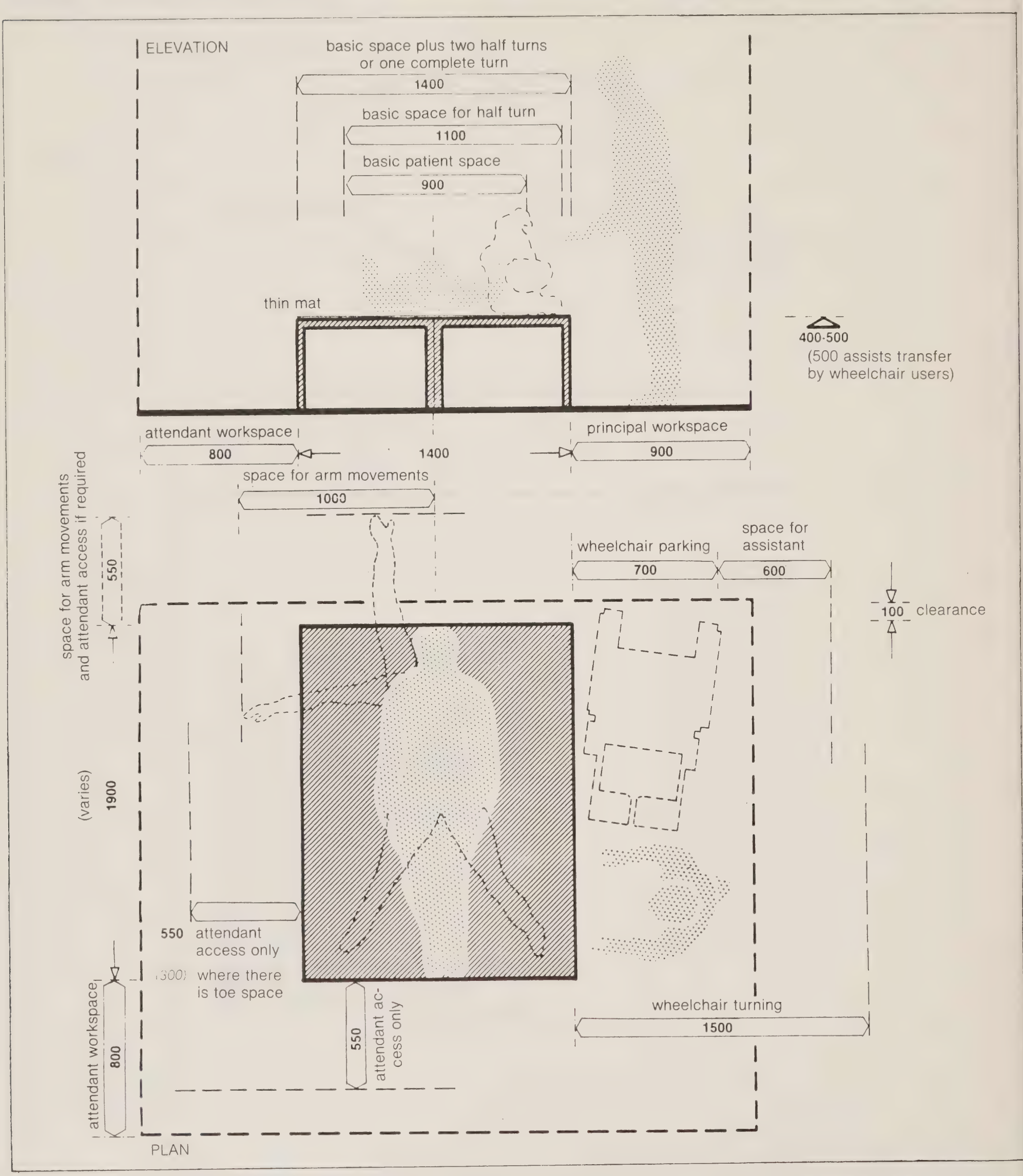
ACTIVITIES
Rehabilitation exercises

Exercise table

High mat

USERS
Partially capable (including the elderly) with assistance

Ergonomic data bank: Component-user data sheet DHSS not to scale



1350 (1300)

Preferred minimum

Restricted minimum (not recommended for general use: see explanatory notes)

Notes

1 Exercise tables are available in widths from 600 to 1100. The narrower widths are easier to handle and store, and can be combined to form a high mat facility as shown.

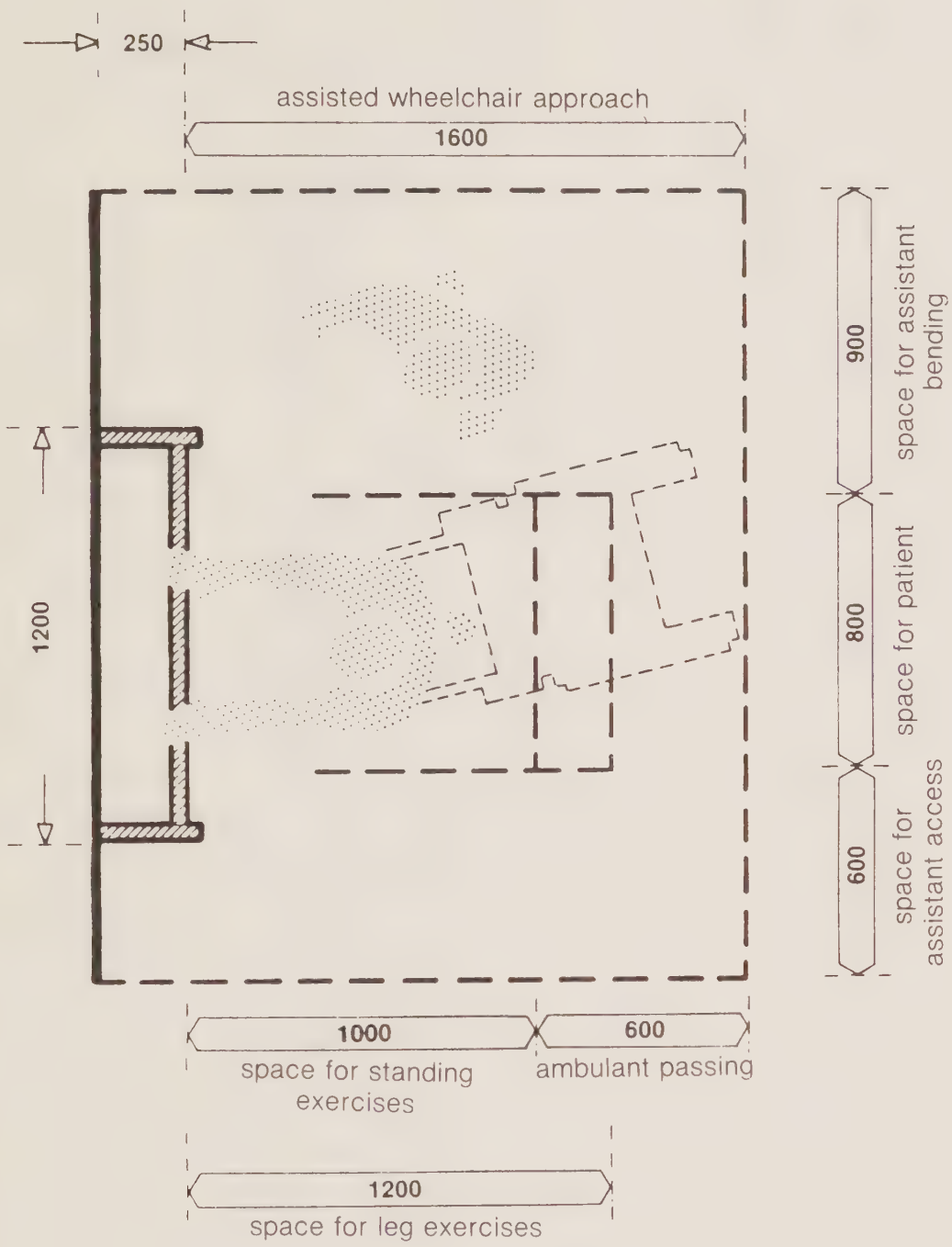
ACTIVITIES
Rehabilitation exercises

Wall bars

Gym

USERS
Partially capable (including the elderly) with assistance

Ergonomic data bank: Component-user data sheet DHSS not to scale



1350	(1300)
Preferred minimum	*Restricted minimum (not recommended for general use: see explanatory notes)*

Notes

1 Larger assistant workspace may be on either side of patient.

ACTIVITIES

Rehabilitation in walking and standing

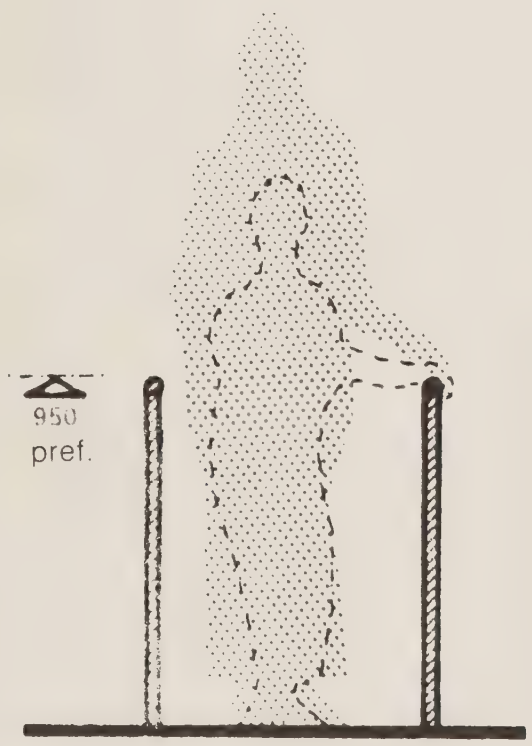
Parallel bars

Various (including long, short, adjustable & portable)

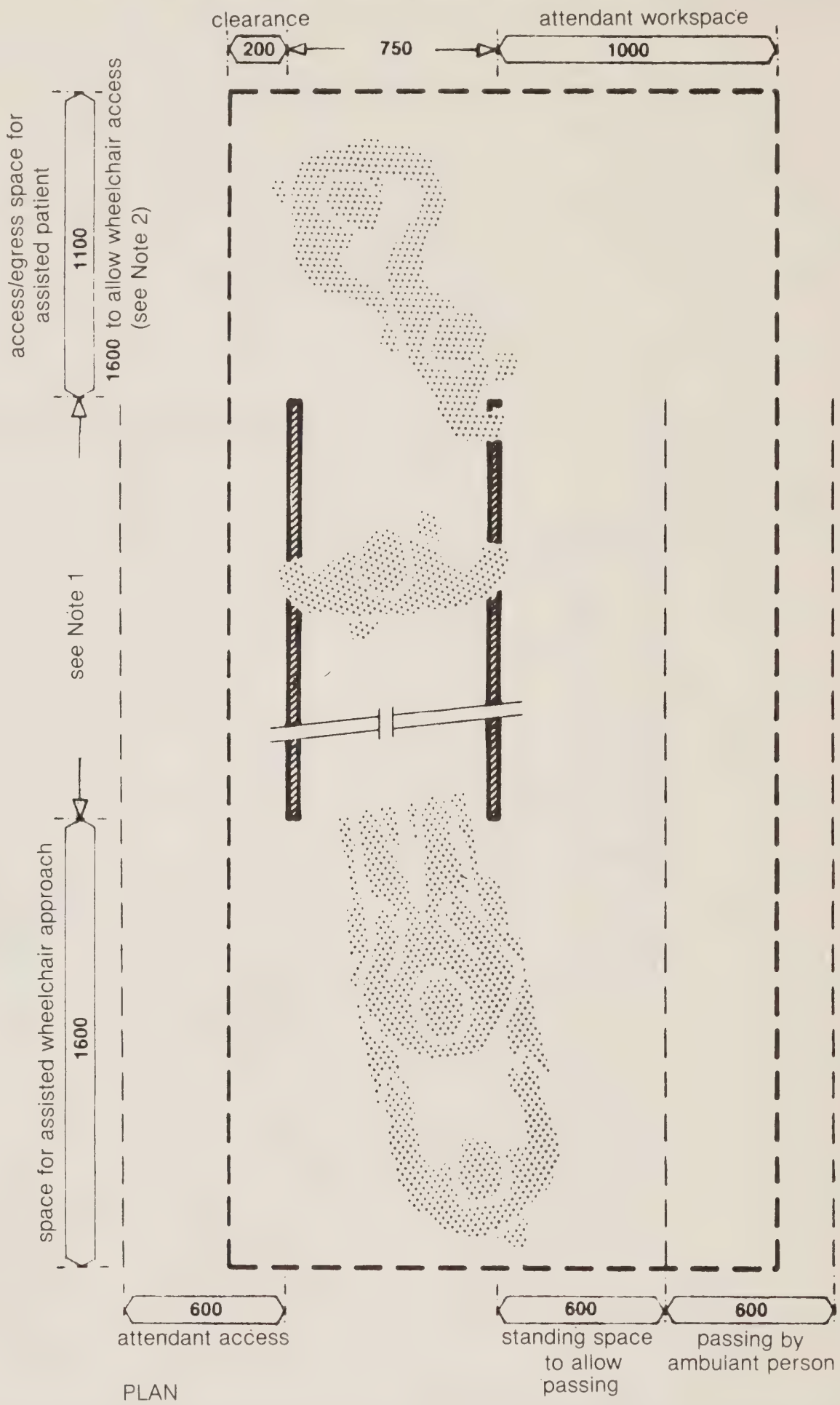
USERS

Partially capable (including the elderly) with assistance

Ergonomic data bank: Component-user data sheet DHSS not to scale



ELEVATION



PLAN

1350 (1300)

Preferred minimum

Restricted minimum (not recommended for general use: see explanatory notes)

Notes

1 Length of bars varies depending on users, activities and space available. Lengths vary from 1500 for simple standing exercises to 2500-1500 for walking exercises.

2 Access for wheelchairs to receive patients at the end of a walking exercise is necessary where the length of bars exceeds 3000.

ACTIVITIES

Dual access WC affording full assistance by two persons, including lateral transfer from a wheelchair positioned either side of the WC
This facility is particularly useful for high dependency patients

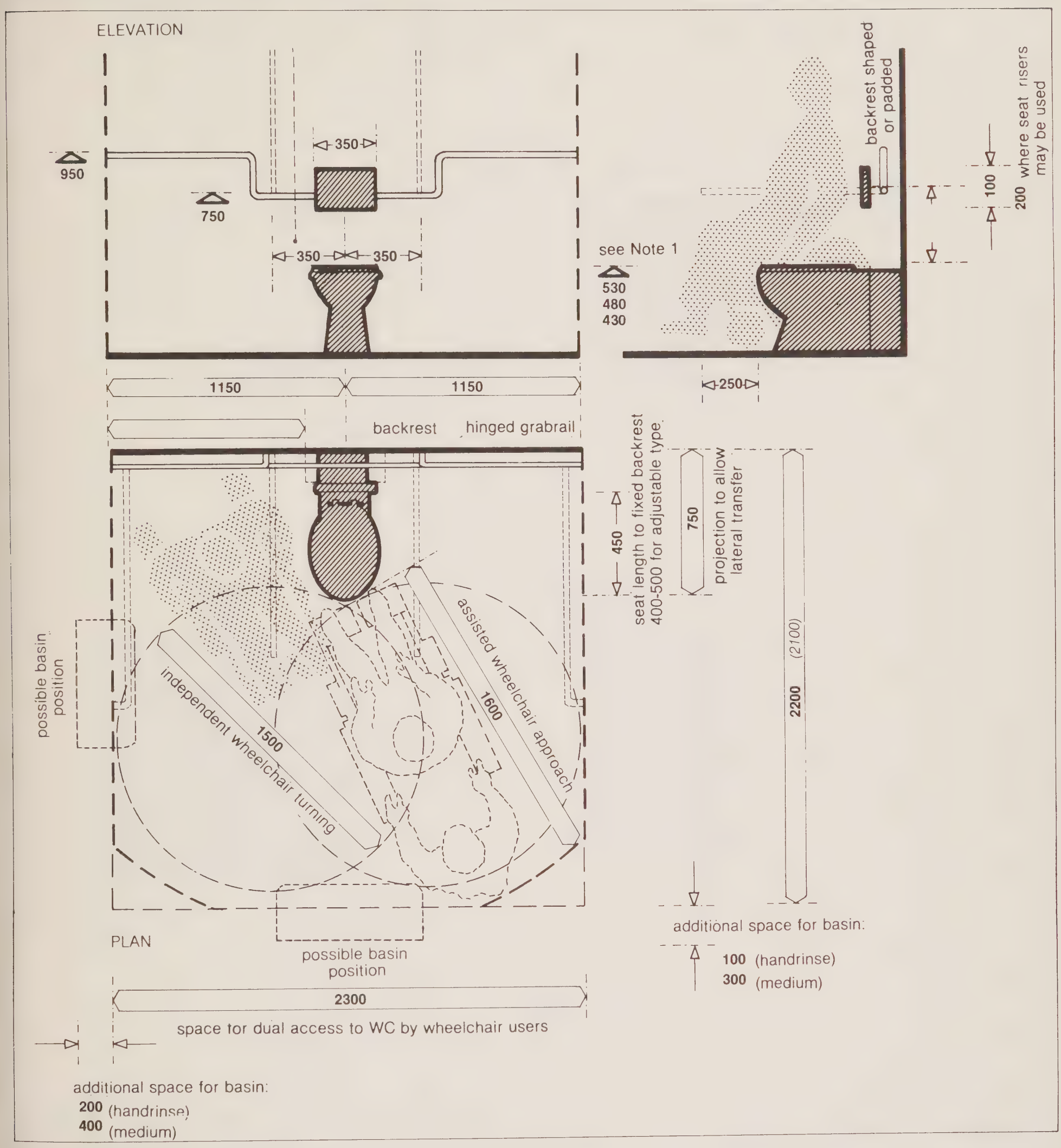
WC

Adult hospital type

USERS

Assisted wheelchair users
(including the elderly)

Ergonomic data bank: Component-user data sheet DHSS not to scale



1350	(1300)
Preferred minimum	*Restricted minimum (not recommended for general use: see explanatory notes)*

Notes

1 For satisfactory transfer from a wheelchair a higher seat height is required. Removable seat risers may be used if they are stable during use.

2 Shaped backrest — plan: *200 min.*

ACTIVITIES
Rehabilitation — tending plants
see also **Planting beds**, wheelchair disabled users, side and frontal approach.

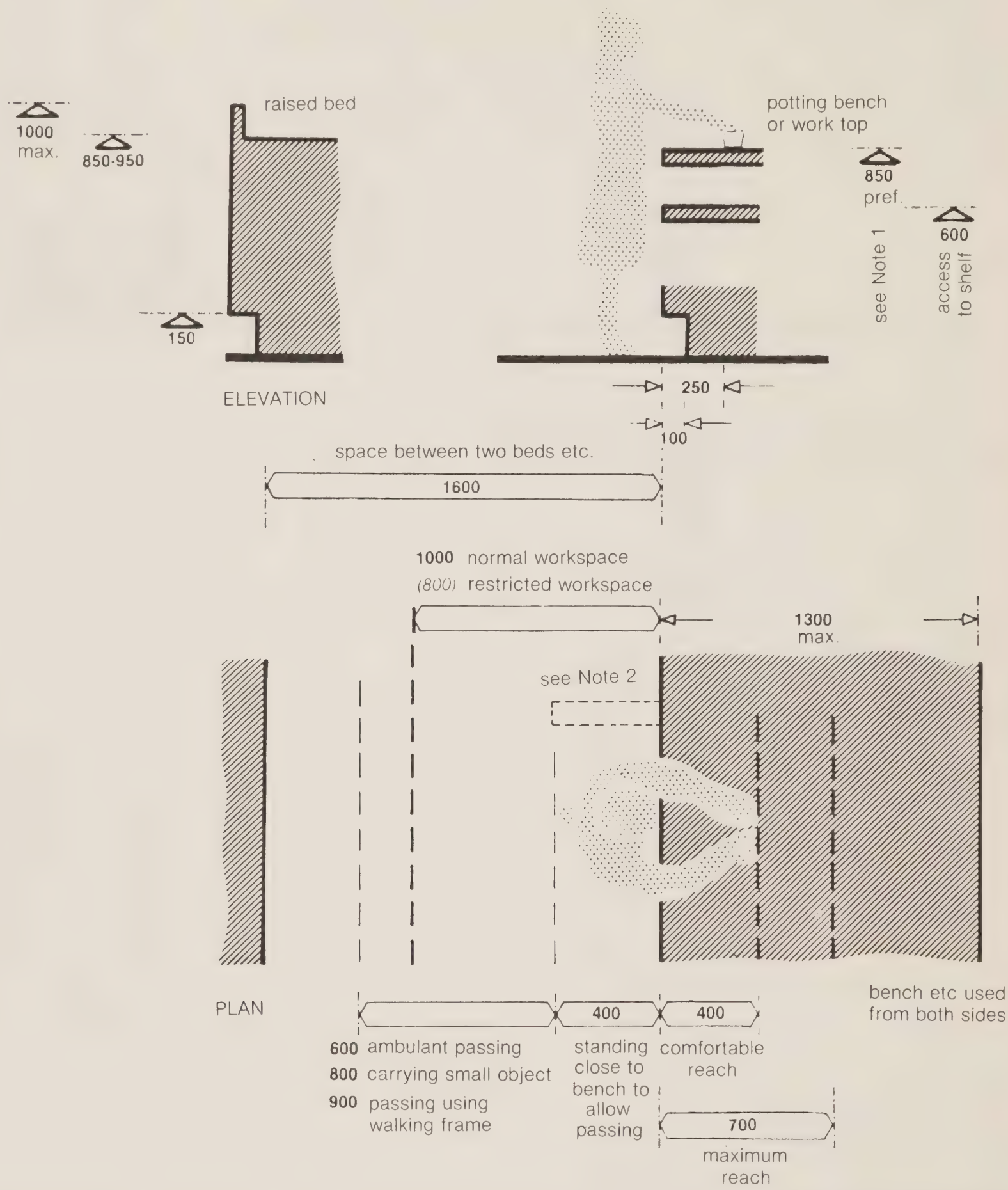
Planting beds

(raised) and potting benches

USERS
Partially capable (including the elderly)

Ergonomic data bank: Component-user data sheet DHSS not to scale

TENDING PLANTS — STANDING



1350	(1300)
Preferred minimum	*Restricted minimum (not recommended for general use: see explanatory notes)*

Notes

1 This applies to a fixed height bench or worktop. A variable height facility is preferred. For standing use range 950, 900, 850, 800. For wheelchair users range 800, 750, 700.

2 A corner position gives lateral support to standing users. Projecting walls of a similar height to the work surface will create a similar amenity.

3 Where width of space under worktop is less than 800 entry and withdrawal space should be increased to 1350 (for assisted users 1600).

ACTIVITIES
Rehabilitation — tending plants
see also **Planting beds**, wheelchair disabled users frontal approach, and **Planting beds**, partially capable users.

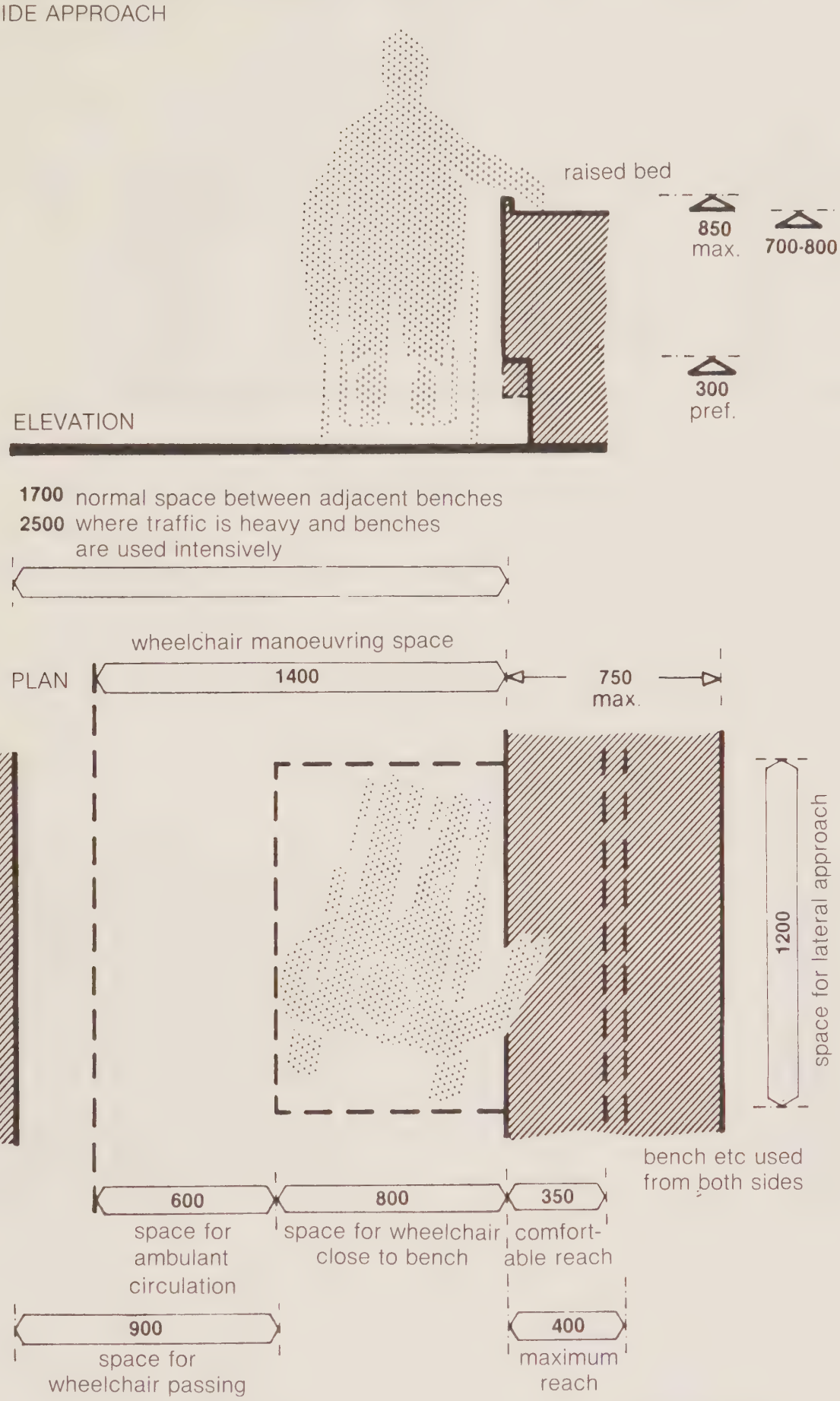
Planting beds

(raised) and potting benches

USERS
Wheelchair disabled
including the elderly

Ergonomic data bank: Component-user data sheet DHSS not to scale

TENDING PLANTS — FROM WHEELCHAIR
SIDE APPROACH



1350	(1300)
Preferred minimum	*Restricted minimum (not recommended for general use: see explanatory notes)*

Notes

1 This applies to a fixed height bench or worktop. A variable height facility is preferred. For standing use range 950, 900, 850, 800. For wheelchair users range 800, 750, 700.

2 A corner position gives lateral support to standing users. Projecting walls of a similar height to the work surface will create a similar amenity.

3 Where width of space under worktop is less than 800 entry and withdrawal space should be increased to 1350 (for assisted users 1600).

ACTIVITIES
Rehabilitation — tending plants
see also **Planting beds**, wheelchair disabled users, side approach, and **Planting beds**, partially capable users.

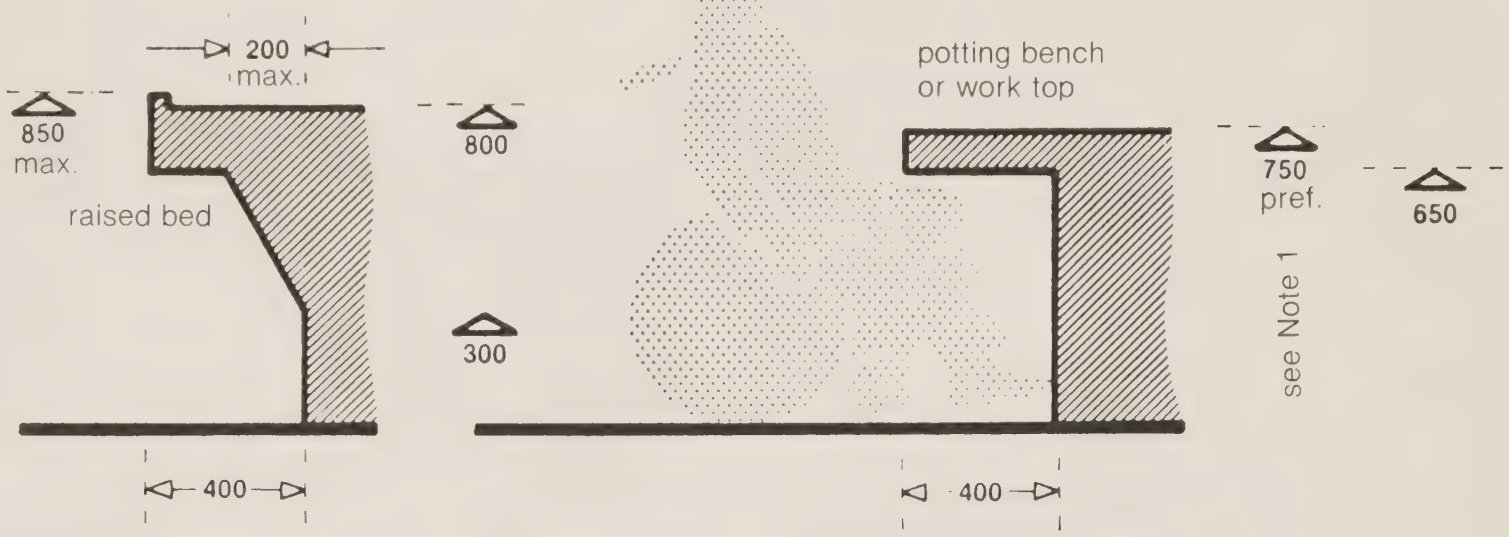
Planting beds

(raised) and potting benches

USERS
Wheelchair disabled
including the elderly

Ergonomic data bank: Component-user data sheet DHSS not to scale

TENDING PLANTS — FROM WHEELCHAIR
FRONTAL APPROACH



ELEVATION

1700 normal space between adjacent benches
2500 where traffic is heavy and benches are used intensively

wheelchair manoeuvring space where width of recess is less than 1200

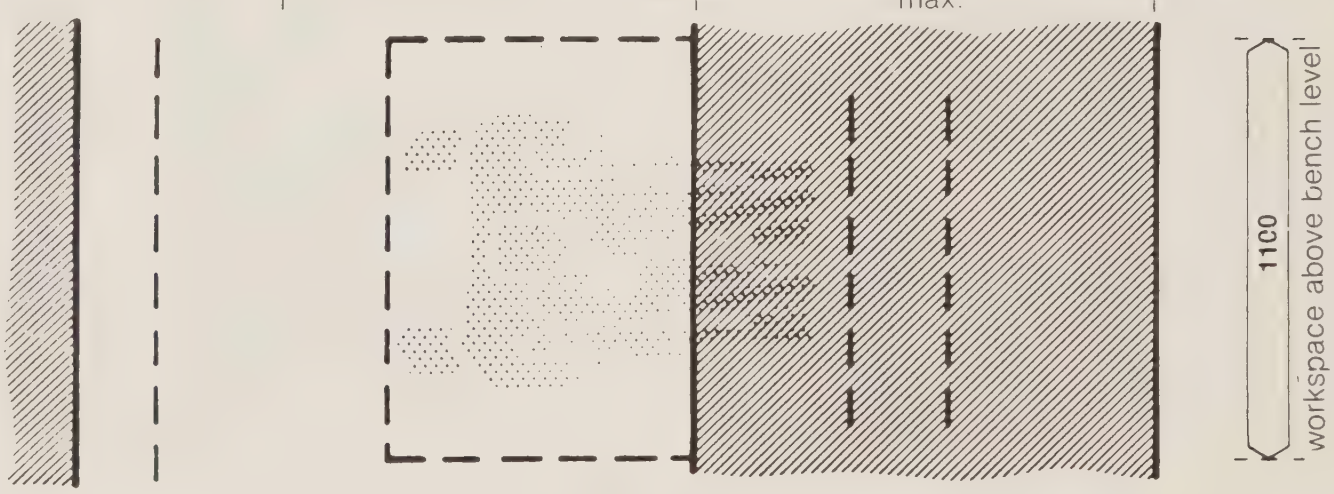
1400

wheelchair manoeuvring space where width of recess under bench etc is more than 1200

1100

1200
max.

PLAN



bench etc used from both sides

600 space for ambulant circulation

800 space for wheelchair close to bench

400 comfortable reach

900 space for wheelchair passing

650 maximum reach

1350 (1300)

Preferred minimum

Restricted minimum (not recommended for general use: see explanatory notes)

Notes

1 This applies to a fixed height bench or worktop. A variable height facility is preferred. For standing use range 950, 900, 850, 800. For wheelchair users range 800, 750, 700

2 A corner position gives lateral support to standing users. Projecting walls of a similar height to the work surface will create a similar amenity.

Bibliography

(not including detailed engineering references which are given at the end of Chapter 4)

OFFICIAL PUBLICATIONS

Central Health Services Council. Rehabilitation: report of a Sub-Committee of the Standing Medical Advisory Committee. (Chairman: Sir Ronald Tunbridge.) HMSO, 1972, 187 pp.

Department of Health and Social Security. Manufacturers' Data Base: storage and work top units 5/1, revised 1973 range. DHSS, 1977 (Amended – July 1976), 9 pp. To be superseded by the Component Data Base Storage document.

Department of Health and Social Security and Welsh Office. The organisation of the in patients' day: report of a committee of the Central Health Services Council. (Chairman: Sir John Hanbury.) HMSO, 1976, 102 pp.

Department of Health and Social Security. Priorities for health and personal social services in England: a consultative document. HMSO, 1976, 83 pp.

Scottish Home and Health Department. In patient accommodation. Revised 1977 (Hospital Planning Note 1). Edinburgh, SHHD, 1977, 151 pp.

Department of Health and Social Security. Priorities in the health and social services: The Way Forward: further discussion of the Government's national strategy based on the consultative document 'Priorities for health and personal social services in England'. HMSO, 1977, 52 pp.

Health Advisory Service. Annual report of the Health Advisory Service to the Secretary of State for social services and Secretary of State for Wales for the year 1976. HMSO, 1977, xii, 94 pp.

Department of Health and Social Security. Review of health capital: a discussion document on the role of capital in the provision of health services. DHSS, 1979 pp 74–99. (Appendix 5. Adaptability of small hospitals)

British Standards Institution. BS 5810. Access for the disabled to buildings BSI 1979, 8 pp.

Department of Health and Social Security. Hospital Accommodation for Elderly People. HMSO, 1981. (Health Equipment Note 37)

OFFICIAL CIRCULARS AND MEMORANDA

Ministry of Health. Abatement of electrical interference. HMSO, 1965, 26 pp. (Hospital Technical Memorandum 14)

Ministry of Health. Staff location systems. HMSO, 1968, 10 pp. (Hospital Technical Memorandum 20)

Department of Health and Social Security. Hospital Geriatric Service. DHSS, 1971. (DS 329/71)

Department of Health and Social Security. The upgrading and adaptation of existing buildings. DHSS, 1974, 4pp. (DS 183/74)

Department of Health and Social Security. Emergency electrical services. HMSO, 1974, 33 pp. (Hospital Technical Memorandum 11)

Department of Health and Social Security. Electrical services: supply and distribution. HMSO, 1977, 48 pp. (Health Technical Memorandum 7)

Department of Health and Social Security. Piped medical gases, medical compressed air and medical vacuum installations. HMSO, 1977, 92pp. (Health Technical Memorandum 22)

Department of Health and Social Security. Ambulance services: operational control and use. DHSS, 1978, 7 pp. (HC(78)45)

Department of Health and Social Security. Cold Water supply: storage and mains distribution. HMSO, 1978, 74 pp. (Health Technical Memorandum 27)

Department of Health and Social Security. A programme for improving geriatric care in hospital: report of a working group. DHSS, 1979, 10 pp. (HN(79)35)

Department of Health and Social Security. Floor Covering Study Group: carpet/textile/soft floor section report. DHSS, 1978, 14 pp. (Enclosure to HN(78)32)

Department of Health and Social Security. Fire Safety in New Health Buildings. DHSS (Health Technical Memorandum 81) (In preparation)

Department of Health and Social Security. Legionnaires Disease and hospital water systems DHSS, 1980 2 pp (HN(80)39)

OTHER PUBLICATIONS

Agate, John. Colour in hospitals. *World Medicine*, 1969, May 20, vol 4, no 17, pp 13–17.

Brocklehurst, J.C. Geriatric day hospital. King Edward's Hospital Fund for London, 1970, 100 pp.

Brocklehurst, J.C. Role of day hospital care. *British Medical Journal*, 1973, Oct. 27, vol 4, pp 223–225.

Scottish Hospital Centre. Day hospitals for geriatric patients. (Centrepiece). Edinburgh, Scottish Hospital Centre, 1973. 99 pp.

Wilshere, E.R. Compiler. Equipment for the disabled. Oxford Regional Health Authority, 1973, 11 vols. Obtainable from: Equipment for the Disabled, 2 Foredown Drive, Portslade, Sussex BN4 2BB.

Ransome, M.E. Physiotherapy in the geriatric day hospital. *Gerontolgica Clinica*, 1974, no 16, pp 274–280. (The Lennard Day Hospital, Bromley.)

Thoday, P.R. and Sargent, M.J. Hospital grounds utilisation: an investigation into the social and medical contribution grounds make to the hospital community. Bath University, 1974, iv, 77 pp.

British Geriatrics Society and Royal College of Nursing of the United Kingdom. Improving geriatric care in hospital: report of a working party. Royal College of Nursing of the United Kingdom, 1975, 62 pp.

Elliott, James R. Living in hospital: the social needs of people in long-term care. King Edward's Hospital Fund for London, 1975, 84 pp.

Norton, Doreen. The ergonomically organised environment. *Hospital Equipment and Supplies*, 1975, Feb., vol. 21, No 2, pp 40–42.

Barrowclough, Fred. Design for geriatric care. *Nursing Times*, 1976, Aug. 26, vol. 72, No 34, pp 1330–1331.

Brocklehurst, J.C. The day hospital. *Physiotherapy*, 1976, May 10, vol. 62, No 5, pp 148–150.

Goldsmith, Selwyn. Designing for the disabled. 3rd edition. RIBA Publications, 1976, 525 pp.

Conference on transport for the elderly. *Ambulance Journal*, Bournemouth, 1978, April, vol. 6, No 2, pp 53–62. A collection of four papers.

Millard, P.H. To rehabilitate or to vegetate? *Nursing Mirror*, Sutton, 1978, March 16, vol. 146, No 11, pp 14–16.

Norton Doreen. Equipment fit for purpose. *Nursing Times*, 1978, July 6, vol. 74, No 27, Occasional Papers, vol 74, No 19, pp. 73–76.

Stow on the old: geriatric day hospital, Walton-on-Thames, Surrey. *Architectural Review*, 1978, May, vol. 163, No 975, pp 288–294.

Thoday, Peter R. Therapy through horticulture. British Association for the Advancement of Science, 1978, 20pp. A paper from the BAAS Annual Meeting, Bath University, 4–8 September 1978.

Burley, L.E. and others. Contribution from geriatric medicine within acute medical wards. *British Medical Journal*, 1979, July 14, vol. ii, pp 90–92.

Dobson Anne. Showers for the elderly: Showers were successfully introduced in a new hospital, *Nursing Times*, 1979, May 17, vol. 75, No 20, pp 841–842.

Gilkes, M.J. Eyes run on light. *British Medical Journal*, 1979, June 23, vol. i, pp 1681–1683.

Millard, P.H. The promotion of continence. *Health Trends*, 1979, Feb., vol. 11, No 1, pp 27–28.

Office of Population Censuses and Surveys. Population projections 1977–2017. Population projections by sex, age and marital status, United Kingdom and constituent countries from mid-1977. HMSO, 1979, vi, 93pp. (Series PP2 No 9).

Raphael, W. and Manderville J. Old People in Hospital. King Edward's Hospital Fund for London, 1979, 50pp.

Brocklehurst, J.C. and Tucker, J.S. Progress in Geriatric Day Care. King Edward's Hospital Fund for London, 1980, 204 pp.

Wells, Thelma J. Problems in Geriatric Nursing Care. Churchill Livingstone, 1980, 157 pp.

DHSS Welsh Office

Prices do not include postage
Department of Health and Social Security and Welsh Office hospital guidance publications include: Health/Hospital Building Notes, Equipment Notes and Technical Memoranda

Government publications can be purchased from HMSO Bookshops in London (post orders to PO Box 569, SE1 9NH), Edinburgh, Cardiff, Belfast, Manchester, Birmingham and Bristol or through booksellers

Health/Hospital Building Notes

4	Ward units (revised 1968)	£1
12	Out-patient department	95p
15	Pathology department (revised 1973)	£3
24	Residential accommodation for staff	21p
25	Laundry (revised 1977)	£1.50
26	Operating department	£1.15
27	Intensive therapy unit	£1.25
28	Dental department of the out-patient department	15p
34	Works department for District General Hospitals and Teaching Hospitals	60p

Health/Hospital Equipment Notes

1	Equipping a hospital building	20p
4	Ward units (Revised 1971)	95p
10	Kitchens	85p
11	Dining rooms	60p
14	Training school for nurses	15p
16	Boiler house and steam boiler plant	38p
20	Mortuary and post-mortem room	90p
21	Maternity department	£2
23	Children's ward	85p
25	Laundry	£1.50
28	Dental department of the out-patient department	30p
29	Pharmaceutical department	48p

CI/SfB
416/ / /

DHSS HBN37 HOSPITAL ACCOMMODATION FOR ELDERLY PEOPLE HMSO

HMSO publications are available from:

HMSO Publications Centre
(Mail and telephone orders only)
PO Box 276, London SW8 5DT
Telephone orders (01) 622 3316
General enquiries (01) 211 5656

HMSO Bookshops
49 High Holborn, London, WC1V 6HB (01) 211 5656 (Counter service only)
258 Broad Street, Birmingham, B1 2HE (021) 643 3757
Southey House, 33 Wine Street, Bristol, BS1 2BQ (0272) 24306/24307
9-21 Princess Street, Manchester, M60 8AS (061) 834 7201
80 Chichester Street, Belfast, BT1 4JY (0232) 234488
13a Castle Street, Edinburgh, EH2 3AR (031) 225 6333

HMSO's Accredited Agents
(see Yellow Pages)

and through good booksellers

© Crown copyright 1981
First published 1981
Third impression 1982

ISBN 0 11 320743 3